

# NEW RECORDS AND SPECIES OF NEOTROPICAL BARK BEETLES (SCOLYTIDAE: COLEOPTERA), PART V<sup>1</sup>

by

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## ABSTRACT

The tribe Carphodicticini, the genera *Carphodicticus*, *Periocryphalus*, and *Phelloterus*, and 101 species are described as new to science. Notes on the habits of *Cladoctonus boliviae* (Wood), *Mimips mimicus* Schedl, and *Styphlosoma granulatum* Blandford are included; and the female of *Styphlosoma granulatum* Blandford is described. The species new to science include the following: *Phrixosoma crebrum*, *P. frustratum* (Colombia), *P. viriosum*, *Chramesus macrocornis*, *C. orinocensis*, *C. strigilis*, *C. imporcatus*, *C. inpolitus*, *C. parvus*, *C. denticulatus*, *C. priscus*, *C. vinealis*, *C. solicitatus*, *C. peniculus*, *Chaetophloeus andinus*, *Liparthrum carapae*, *L. meridensis* (Venezuela), *Pycnarthrum inornatum*, *Pyc. funerium*, *Pyc. perditum* (Honduras), *Pyc. fici* (Honduras, Venezuela), *Pyc. lucidum* (Costa Rica), *Pyc. carinatum* (Peru), *Pyc. subcarinatum* (Venezuela), *Pyc. brosmii* (Venezuela, Colombia), *Gymnocolulus alni* (Mexico), *Scolytodes ommateus* (Colombia), *S. punctifer*, *S. hirsutus* (Costa Rica), *S. crassus* (Panama), *S. pannuceus* (Honduras), *S. micidus* (Mexico, Guatemala), *Microborus lectus*, *Scolytus barinensis*, *Scolytopsis orinocanus*, *Carphodicticus cristatus* (Venezuela), *Pseudothyssanoes querneus*, *Ps. furvescens*, *Ps. funereus*, *Ps. graniticus*, *Ps. verticillus*, *Ps. cuspidis*, *Ps. tenellus*, *Ps. yuccavorus*, *Thysanoes inornatus*, *Micracisella adnata* (Mexico), *M. serjaniae*

(Honduras), *Micracis amplinis*, *Mic. incertus*, *Mic. torus* (Mexico), *Mic. exilis*, *Mic. vitulus*, *Mic. sentus* (Venezuela), *Hylocurus torosus* (South Carolina), *H. dilutus*, *H. dissidens* (Mexico), *H. disparilis* (Honduras), *H. verrucosus*, *H. villifrons*, *H. singularis*, *H. flagellatus*, *Stegomerus mirandus*, *Phacrylus pruni*, *Periocryphalus pullus* (Venezuela), *Hypothenemus nanellus*, *H. ascitus* (Costa Rica), *H. teretis* (Costa Rica, Venezuela), *Cryptocarenum coronatus* (Venezuela), *C. lepidus* (Costa Rica, Guatemala), *Dendrocranulus tardulus*, *D. diversus*, *D. pumilus*, *D. limus* (Costa Rica), *Xyleborus ebenus* (Costa Rica, Panama), *Mimips analogus*, *Mim. uncinatus* (Venezuela), *Mim. fortis* (Costa Rica, Panama), *Mim. bidens*, *Mim. ocellaris* (Colombia), *Styphlosoma subulatum* (Venezuela), *Dendroterus eximius*, *Den. sodalis* (Guatemala), *Den. parilis*, *Den. resolutus* (Costa Rica), *Den. defectus* (Costa Rica, Panama), *Den. cognatus* (Mexico), *Phelloterus tersus* (Venezuela), *Ph. anaxeus*, *Ph. atrocis* (Colombia), *Pityophthorus arceuthobii* (Mexico), *Pityoborus hondurensis* (Honduras), *Pit. frontalis* (Mexico), *Pseudopityophthorus singularis*, *Pd. virilis*, *Pd. declivis* (Mexico), *Pd. colombianus* (Colombia), *Gnathophthorus clematis* (Mexico), *G. cracens* (Honduras), *G. rallus*, *G. pertusus* (Venezuela), and *Sphenoceros aztecus* (Mexico).

## INTRODUCTION

While preparing a taxonomic monograph of the Scolytidae of North and Central America a large number of species new to science were discovered. Because it will be several years before that work will be concluded, the new names are being published in order to stabilize nomenclature and to facilitate identification.

On the following pages 101 species and three genera are described as new to science; a new tribe Carphodicticini is also proposed for the genera *Carphodicticus* Wood, described below, and *Craniodicticus* Blandford. The new species represent the following genera: *Phrixosoma* (3), *Liparthrum* (2), *Chaetophloeus* (1), *Chramesus*

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(12), *Pycnarthrum* (8), *Gymnochilus* (1), *Scolytodes* (6), *Microborus* (1), *Scolytus* (1), *Scolytopsis* (1), *Carphodicticus* (1), *Pseudothysanoes* (8), *Thysanoes* (1), *Micracisella* (2), *Micracis* (6), *Hyllocurus* (8), *Stegomerus* (1), *Phacrylus* (1), *Hypothenus* (3), *Periocyphalus* (1), *Cryptocarenus* (2), *Dendrocranulus* (3), *Xyleborus* (1), *Mimips* (5), *Styphlosoma* (1), *Dendroterus* (6), *Phelloterus* (3), *Pityophthorus* (1), *Pityoborus* (2), *Pseudopityophthorus* (4), *Gnathophthorus* (4), and *Sphenoceros* (1).

The new species are from the following countries: United States (1), Mexico (25), Guatemala (2), Honduras (8), Costa Rica

(12), Panama (1), Colombia (8), Venezuela (38), and Peru (1). One species in each of the following combinations of countries is also included: Mexico-Honduras-Costa Rica; Honduras-Venezuela; Honduras-Costa Rica; Guatemala-Costa Rica; and Colombia-Venezuela.

Except as noted below, the type series were tentatively deposited in my collection presently housed at the Brigham Young University, in order to facilitate preparation of a monograph of the Scolytidae of the Western Hemisphere. Upon completion of that monograph paratypes will be distributed to several major cooperating museums.

## SYSTEMATIC SECTION

### *Phrixosoma crebrum*, n. sp.

This species is closely allied to *minor* Wood, but it is distinguished by the much more weakly impressed transverse line on the female vertex and by the finely punctured pronotum with granules restricted to the margins.

**FEMALE.**—Length 1.8 mm (paratypes 1.5-1.9 mm), 1.9 times as long as wide; color almost black.

Frons as in *minor* except more coarsely reticulate-granulate, line on vertex and laterally, of same pattern but much less strongly impressed. Pronotum as in *minor*, except surface smooth, shining, punctures irregularly shaped, distinctly, shallowly impressed, granules indicated only near base and lateral margins. Elytra as in *minor* except surface more strongly reticulate-granulate, interstitial granules evidently slightly smaller.

**MALE.**—Similar to female except devoid of impressed and sinuate line on vertex.

**TYPE LOCALITY.**—Eight km south of Colonia (near Buenaventura), Valle de Cauca, Colombia.

**TYPE MATERIAL.**—The female holotype, male allotype, and 49 paratypes were collected on 9 July 1970, 30 m elevation, No. 640, from *Rheedia madruño*, by S. L. Wood. The biramous parental galleries were more or less longitudinal.

The holotype, allotype, and paratypes are in my collection.

### *Phrixosoma viriosum*, n. sp.

This species is remotely allied to *obesum* Blackman, but it is distinguished by the much

larger size, by the pronotal sculpture, and by the much finer, more numerous interstitial granules.

**FEMALE.**—Length 2.7 mm (paratypes 2.4-2.7 mm), 1.8 times as long as wide; color almost black.

Frons as in *crebrum* Wood, except very slightly less strongly convex, and line on vertex not at all modified or impressed; vestiture very short, moderately abundant.

Pronotum outline much as in *crebrum* except median area extended posteriorly more than in other species; surface densely, strongly, finely reticulate-granulate, intermixed with abundant, shining, small, irregular, somewhat elongate, rounded granules evidently derived from margins of punctures. Vestiture of rather abundant short, stout recumbent bristles.

Elytra 1.1 times as long as wide, 1.7 times as long as pronotum; sides weakly arcuate on basal two-thirds, rather narrowly rounded behind; striae narrowly, very deeply impressed, longitudinally strigose, punctures very small, rather deep, rather widely spaced; interstriae about four times as wide as striae, strongly reticulate-granulate, with very numerous, confused, narrow crenulate granules, each granule about one-fourth as wide as an interstriae on basal half. Declivity beginning about middle of elytra, gradual, convex; interstriae becoming about half as wide as on disc, granules largely obsolete before middle of declivity. Vestiture of abundant, slender, curved scales of equal length, confused.

**MALE.**—Indistinguishable from female by external characters.

TYPE LOCALITY.—Forty km southeast of Socopo, Barinas, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 96 paratypes were taken at the type locality on 25 January 1970, 150 m elevation, No. 254, from *Rheedia madruño*, by S. L. Wood. The biramosse parental galleries were longitudinal.

The holotype, allotype, and paratypes are in my collection.

*Phrixosoma frustratum*, n. sp.

This species may be remotely allied to *viriosum* Wood, but it is unique in having the striae much more weakly, irregularly impressed, and in having, in the female, a large, subquadrate extension of the anterior margin of the pronotum fitting snugly against the head behind the eye.

FEMALE.—Length 2.8 mm (paratypes 2.7-3.0 mm), 1.6 times as long as wide; color almost black.

Frons as in *viriosum* except granules finer. Pronotum as in *viriosum* except posteromedian area less strongly produced, and surface with very indistinct small punctures indicated and granules smaller, closer. Vestiture of fine and coarse short hair. Anterolateral margin of pronotum with a large, subquadrate extension projecting forward flush with side of head between upper and lower halves of eye and equal in area to upper half of eye.

Elytra as in *viriosum* except striae much less strongly impressed, granules slightly smaller, vestiture much more slender, a central row on each interstriae slightly stouter and very slightly longer on declivity.

MALE.—Similar to female except process on anterolateral margin of pronotum absent.

TYPE LOCALITY.—Eight km south of Colonia (near Buenaventura), Valle de Cauca, Colombia.

TYPE MATERIAL.—The female holotype, male allotype, and 93 paratypes were taken at the type locality on 9 July 1970, 30 m elevation, from *Rheedia madruño*, by S. L. Wood. The biramosse parental galleries were longitudinal.

The holotype, allotype, and paratypes are in my collection.

*Chramesus macrocornis*, n. sp.

This species evidently is allied to *hylurgoides* Schedl, but it is smaller, it has much smaller striae punctures, and the male frons is armed by a pair of very large tubercles.

MALE.—Length 2.3 mm (paratypes 1.9-2.3 mm), 2.1 times as long as wide; color very dark brown, elytra lighter.

Frons deeply concave from epistoma to upper level of eyes; lower lateral margin at level of antennal insertion armed by a pair of very large, triangular, almost hornlike processes; surface minutely reticulate, dull; concavity impunctate, fine, sparse, shallow punctures above upper level of eyes; vestiture short, fine, sparse. Antennal club typical of genus; rather large; apex rounded.

Pronotum 0.85 times as long as wide; widest at base, sides arcuately converging to slight constriction just before broadly rounded, submarginate, anterior margin; surface subreticulate, shining, entirely devoid of granules and asperities; punctures rather small to moderately large intermixed, rather deep, moderately close except very close near base. Vestiture of very fine, short, inconspicuous hair.

Elytra 1.3 times as long as wide; sides almost straight and parallel on basal two-thirds, broadly rounded behind; striae 1 moderately, others feebly or not at all impressed, punctures moderately large at base, gradually decreasing in size until minute at base of declivity; interstriae smooth, twice as wide as striae at base, punctures mostly uniseriate, finely granulate on basal half. Declivity rather steep, broadly convex; striae not impressed, punctures very fine; interstriae smooth, punctures minute, confused. Vestiture of rather abundant, fine, moderately long hair.

FEMALE.—Similar to male except frons weakly concave, a transverse callus just below middle, surface reticulate, finely, sparsely punctured, tubercles absent; lateral areas of pronotum finely subasperate; striae punctures decrease in size only slightly toward declivity; interstitial granules moderately large to declivity; striae punctures on declivity slightly larger, granules obsolete.

TYPE LOCALITY.—Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 56 paratypes were taken at the type locality on 22 October 1969, 1700 m elevation, from rather old stumps of cut Japanese bamboo, by S. L. Wood. The habits were as in *gracilis* Wood.

*Chramesus simplicis*, n. sp.

This species evidently is similar to *hylurgoides* Schedl, but it is distinguished by the smaller size, by the more widely separated eyes



in the male, by the absence of pronotal punctures, and by the very fine strial punctures.

MALE.—Length 2.2 mm (paratypes 1.9-2.5 mm), 2.4 times as long as wide; color black.

Frons deeply, broadly concave from epistoma to upper level of eyes, lower fourth of lateral margin acute, not strongly elevated or dentate; surface minutely rugulose-reticulate, not punctured; vestiture on lateral margins moderately abundant, fine, very long, in concavity very short, sparse. Antennal club typical of genus; moderately large; apex rounded.

Pronotum 0.91 times as long as wide; widest one-third length from base, sides rather strongly arcuate, moderately constricted just before rather broadly rounded anterior margin; surface strongly reticulate; all punctures replaced by narrow, small asperities over entire surface. Vestiture of rather abundant, fine, moderately long hair.

Elytra 1.7 times as long as wide, 2.0 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae very feebly, broadly impressed, punctures minute; interstriae smooth, dull, four or more times wider than striae, punctures minute, a few on basal half finely granulate, subasperate near base on interstriae 2-4. Declivity steep, rather narrowly convex; sculpture about as on posterior half of disc. Vestiture of moderately abundant, fine, rather long hair.

FEMALE.—Similar to male except frons moderately convex, vestiture shorter, more evenly distributed; strial punctures larger, rather small; interstriae except 1, each with a row of rather fine granules to base of declivity; punctures of declivital striae smaller than on disc; interstitial granules largely obsolete.

TYPE LOCALITY.—Carbonera Experimental Forest, about 50 km (airline) northwest of Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 33 paratypes were taken at the type locality on 12 January 1970, 2500 m elevation, No. 213, from native bamboo, by S. L. Wood. The habits were as in *gracilis* Wood.

*Chramesus orinocensis*, n. sp.

This species is allied to *subopacus* Schaeffer, but it is distinguished by the smaller size, by the less strongly, less extensively impressed male frons with the lateral margins less well developed, and by the larger strial punctures.

MALE.—Length 1.7 mm (paratypes 1.6-1.8 mm), 1.6 times as long as wide; color very dark brown, vestiture somewhat lighter.

Frons rather deeply concave from epistomal margin to just below upper level of eyes, then flattened from there to vertex; lateral margins acutely, rather strongly elevated from epistomal area to half distance between level of antennal insertion and upper margin of eye; entire surface strongly reticulate, punctures very small, not clearly indicated; vestiture of fine, long hair, moderately abundant near marginal areas of upper half.

Pronotum 0.80 times as long as wide; essentially as in *subopacus*.

Elytra 1.0 times as long as wide; sides almost straight and parallel on slightly less than basal half, broadly rounded behind; striae slightly impressed, punctures moderately large, distinctly, shallowly impressed; interstriae twice as wide as striae, weakly convex, almost smooth but not shining, punctures fine, abundant, confused. Declivity as in other species; sculpture as on disc. Vestiture of abundant, short, interstitial scales in ground cover, each slightly longer than wide, some with acute points; and interstitial rows of longer, erect scales, each about two and one-half times as long as ground cover, about six times as long as wide.

FEMALE.—Similar to male except frons weakly convex, lateral margins not modified, vestiture short, coarse, uniformly distributed; anterolateral areas of pronotum moderately asperate; basal half of each discal interstriae armed by a row of small granules.

TYPE LOCALITY.—Campamento Rio Grande, 30 km east of Palmar, Bolivar, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 71 paratypes were taken at the type locality on 12 June 1970, 200 m elevation, No. 568, from Bejucó Trinitario, by S. L. Wood. The host appeared very similar to, if not identical with, *Celtis iguanae*. Specimens were taken from a small, broken branch, from transverse parental tunnels.

The holotype, allotype, and paratypes are in my collection.

*Chramesus strigilis*, n. sp.

This species evidently is allied to *orinocensis* Wood, but it is distinguished by the larger average size, by the lighter color, by the coarser vestiture and by the strongly, closely serrate lateral margins of the male frons.



MALE.—Length 2.0 mm (paratypes 1.9-2.1 mm), 1.5 times as long as wide; color brown.

Frons deeply, broadly concave from epistomal margin to well above eyes; lateral margins acutely elevated from epistoma to level of antennal insertion, much more strongly elevated and closely, strongly serrate from there to two-thirds distance to upper level of eyes; surface reticulate, a few fine, obscure punctures indicated; vestiture of fine, sparse, short hair.

Pronotum 0.74 times as long as wide; widest at base, sides arcuate and strongly converging to slight constriction just before broadly rounded anterior margin; surface reticulate; postero-median area rather sparsely, coarsely, shallowly punctured, anteriorly and laterally from this point anterior margins of punctures become increasingly asperate as punctures become smaller and more obscure, a few nonasperate punctures interspersed. Vestiture of rather long, slender scales.

Elytra 1.1 times as long as wide; sides almost straight and parallel on basal half, broadly rounded behind; striae deeply, rather narrowly impressed, punctures rather small, moderately deep; interstriae about three times as wide as striae, rather strongly convex, almost smooth, punctures very fine, confused; a few pointed granules at bases of large, erect scales. Declivity moderately steep, convex; sculpture about as on disc; interstriae 1 weakly elevated. Vestiture of rather abundant interstitial ground scales, each slightly longer than wide; and interstitial rows of longer, erect scales, each twice as long as ground scales and four times as long as wide, spaced within a row by two or more times length of a scale.

FEMALE.—Similar to male except frons weakly convex, shallowly foveate at center, lateral margins not elevated or otherwise modified; pronotal asperities larger but more nearly restricted to anterolateral areas; interstitial tubercles larger, very widely separated posteriorly but extending to declivity at bases of major setae.

TYPE LOCALITY.—Carbonera Experimental Forest, 50 km (airline) northwest of Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 33 paratypes were taken at the type locality on 27 October 1969, 2500 m elevation, No. 89, from an unidentified cut seedling by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Chramesus imporcatu*s, n. sp.

This species represents a species group new to me. The male frons bears the pair of tubercles on the lateral margins near the antennal insertions as in many other species, but it also bears a pair of sharply elevated carinae on the upper fourth of the lateral margins, their upper limits ending just below the upper level of the eyes. In this species the upper carinae are on the crest of the lateral margins.

MALE.—Length 2.0 mm (paratypes 1.9-2.1 mm), 1.5 times as long as wide; color almost black.

Frons deeply, broadly excavated from epistomal margin to well above eyes; lateral margins below level of antennal insertion strongly, acutely elevated, not pointed, margins above antennal insertion subacutely, weakly elevated then upper third strongly, acutely elevated to just below upper level of eyes; surface deeply reticulate, punctures sparse, small, obscure; vestiture of very fine, short, sparse hair. Antennal club large, typical of genus.

Pronotum 0.79 times as long as wide; widest one-third from base; sides strongly, arcuately converging to moderate constriction just before broadly rounded anterior margin; surface finely reticulate, punctures small, rather shallow, some in anterolateral area finely asperate on anterior margins. Vestiture of elongate, slender scales of moderate abundance.

Elytra 1.0 times as long as wide; sides almost straight and parallel on basal half, broadly rounded behind; striae strongly impressed, punctures rather small, deep; interstriae moderately convex, smooth, almost three times as wide as striae, a median row of narrow, rather high erenulations on each except confused on disc of 2 and part of 3, those in lateral areas more like flattened nodules, minute supplemental punctures also moderately abundant. Declivity rather steep, convex; sculpture about as on disc, granules slightly smaller. Vestiture of very small ground scales, each about twice as long as wide, and longer, erect interstitial scales in rows except confused on 2 and 3 and toward base, each scale about three times as long as ground scales, about six times as long as wide, spaced within a row by length of a scale.

FEMALE.—Similar to male except frons weakly convex, margins simple.

TYPE LOCALITY.—Seven km northwest of Sopo, Barinas, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and nine paratypes were taken at the

type locality on 13 February 1970, 200 m elevation, No. 323, from a shrub known as Palito de Cruz, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Chramesus impolitus*, n. sp.

This species is very closely related to *imporcatus* Wood, but it is distinguished by the smaller size, by the larger strial punctures, by the absence of ground vestiture on the elytra, and by the slight median displacement of the upper ridges on the male frons.

MALE.—Length 1.8 mm (paratypes 1.6-2.0 mm), 1.6 times as long as wide; color almost black.

Frons as in *imporcatus* except upper carinae displaced medially very slightly. Pronotum as in *imporcatus* except punctures more shallow.

Elytra as in *imporcatus* except striae less strongly impressed, punctures larger; interstriae twice as wide as striae except 2 wider; ground vestiture entirely absent, small interstitial punctures also absent.

FEMALE.—Similar to male except frons weakly convex, margins simple.

TYPE LOCALITY.—Campamento Rio Grande, 30 km east of Palmar, Bolivar, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 54 paratypes were taken at the type locality on 12 June 1970, 200 m elevation, No. 581 (some paratypes No. 567), from the shrub Rosa de Montaña (presumably *Brownia* sp.), by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Chramesus parvus*, n. sp.

This species differs from all other representatives of the genus known to me by the small size, by the total absence of ground vestiture on the elytra, by the absence of pronotal asperities, and by the presence of a pair of tubercles arming the male frons as in most other species of the genus.

MALE.—Length 1.4 mm (paratypes 1.3-1.4 mm), 1.9 times as long as wide; color rather dark brown, elytra slightly lighter.

Frons rather strongly concave from epistoma to just below upper level of eyes; lateral margins subacutely elevated on lower half, armed at level of antennal insertion by a pair of coarse, pointed denticles; surface very finely reticulate-

granulate; subglabrous. Antennal club rather small for this genus.

Pronotum 0.85 times as long as wide; widest one-third length from base, sides moderately arcuate on basal half, a slight constriction just before rather broadly rounded anterior margin; surface reticulate; punctures coarse, shallow, not close. Vestiture restricted to a few coarse setae in lateral and anterior areas.

Elytra 1.2 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on slightly more than basal half, broadly rounded behind; striae not impressed, punctures coarse, rather deep; interstriae smooth, shining, slightly wider than striae, punctures replaced by moderately large, uniseriate, setiferous granules. Declivity rather steep, convex; striae and interstriae narrower than on disc, strial punctures and interstitial granules distinctly smaller. Vestiture of interstitial rows of erect bristles; each bristle slightly wider near its tip, spaced within a row by distances slightly less than length of bristle, between rows by distances slightly greater than length of a bristle.

FEMALE.—Similar to male except frons flattened on lower third, foveate at center, lateral margins unmodified.

TYPE LOCALITY.—Rancho Grande, Aragua, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 27 paratypes were taken at the type locality on 9 April 1970, 1100 m elevation, No. 426, from a *Tabebuia* twig, by S. L. Wood. The biramose parental tunnels were broadly V-shaped, with both egg tunnels diagonal.

The holotype, allotype, and paratypes are in my collection.

*Chramesus denticulatus*, n. sp.

This species is unique in the genus. It is distinguished from all known species by the small size, by the unarmed male frons, by the finely asperate anterolateral areas of the pronotum, and by the finely dentate declivital interstriae.

MALE.—Length 1.3 mm (paratypes 1.2-1.3 mm), 1.9 times as long as wide; color yellowish brown.

Frons rather deeply concave on a subcircular area from epistoma to upper level of eyes, lateral margins subacute, unarmed; epistomal margin carinately elevated, more strongly on median third; surface reticulate, punctures minute, obscure; vestiture uniformly short, coarse, uni-

formly distributed setae. Antennal club rather small for this genus.

Pronotum 0.77 times as long as wide; widest near base, sides convergently arcuate to broadly rounded anterior margin; surface reticulate, almost uniformly covered by isolated, rather widely spaced, small subsperate tubercles. Vestiture short, of almost equal numbers of very fine hair and rather broad scales.

Elytra 1.3 times as long as wide, 1.7 times as long as pronotum; sides almost straight and parallel on slightly more than basal half, broadly rounded behind, posterior outline interrupted by declivital teeth; striae moderately impressed, punctures rather coarse, shallow; interstriae subreticulate, weakly convex, as wide as striae; punctures replaced by rows of granules, very fine at base, becoming coarse toward declivity. Declivity rather steep, broadly convex; striae narrower and deeper than on disc; interstriae more narrowly convex, each armed by a row of close, rather small pointed teeth, except almost obsolete on lower half of 2. Vestiture of ground cover formed by two indefinite rows of short, stout setae on margins of each interstriae, and a central row of short, erect scales; each scale about twice as long as wide, spaced within and between rows by slightly more than twice length of a scale; scales about twice as long as ground setae.

FEMALE.—Similar to male except frons weakly concave, epistoma weakly elevated, frontal vestiture of short scales; pronotal asperities larger in anterolateral areas; interstitial teeth on declivity slightly smaller, regularly present on 2.

TYPE LOCALITY.—Twenty km southwest of El Vigia, Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and three paratypes were taken at the type locality on 21 November 1969, 50 m elevation, No. 150, from a small stem of a large, cut Bignoniaceae vine (liana), by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Chramesus priscus*, n. sp.

This species remotely resembles *denticulatus* Wood, but the relationship is remote. It is distinguished by the unarmed male frons that has the epistomal margin transversely carinate, by the feebly asperate anterolateral areas of the pronotum, by the different vestiture, and by the minute declivital granules.

MALE.—Length 2.2 mm (paratypes 2.0-2.2 mm), 1.9 times as long as wide; color brown,

elytra slightly lighter.

Frons rather deeply, broadly concave from epistoma to slightly above eyes; median half of epistoma acutely, transversely carinate, a pair of minute denticles at ends of carina; lateral margins subacute, the fourth immediately above level of antennal insertion thicker, more strongly elevated, not dentate; surface reticulate, punctures very fine, sparse; vestiture fine, long, rather sparse. Antennal club more slender and more sparsely pubescent than in most species.

Pronotum 0.73 times as long as wide; widest at base, sides rather strongly, arcuately converging to slight constriction just before broadly rounded anterior margin; surface strongly reticulate, punctures replaced by fine, sparse granules, finely asperate in lateral areas. Vestiture of fine and stout hairlike setae of moderate abundance.

Elytra 1.3 times as long as wide, 2.0 times as long as pronotum; sides almost straight on basal half, slightly wider near base of declivity, broadly rounded behind; striae weakly impressed, punctures moderately large, rather deep; interstriae twice as wide as striae, weakly convex, minutely irregular, shining, punctures replaced by rows of fine granules, punctures giving rise to ground vestiture mostly too small to see at 80 diameters magnification. Declivity rather steep, convex; striae slightly deeper, interstriae more convex than on disc; interstitial granules rather small, close. Vestiture short, rather coarse, moderately abundant; central row on each interstriae slightly longer and coarser.

FEMALE.—Similar to male except frons weakly convex, weakly, transversely impressed above epistoma, a central fovea present; anterolateral pronotal asperities much larger.

TYPE LOCALITY.—Carbonera Experimental Forest, about 50 km (airline) northwest of Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and nine paratypes were taken at the type locality on 9 December 1969, 2500 m elevation, No. 175, from dead mistletoe (possibly *Phoradendron*), by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Chramesus vinealis*, n. sp.

This species is very closely allied to *orinocensis* Wood, but it is distinguished as indicated below in the description.

MALE.—Length 1.9 mm (paratypes 1.7-2.0 mm), 1.6 times as long as wide; color very dark brown, almost black.



Frons as in *orinocensis* except acutely elevated part of lateral margin more strongly elevated on its lower half and less strongly elevated on its upper half. Pronotum as in *orinocensis* except punctures distinctly larger, slightly deeper, asperities in lateral areas larger, more numerous.

Elytra as in *orinocensis* except striae slightly more strongly impressed, punctures on 1-3 obsolete, others smaller, not as deep; declivital interstriae each with a row of widely spaced fine granules; interstitial ground scales much smaller; erect scales as in *orinocensis*.

FEMALE.—Similar to male except frons convex, margins simple; striae 1-3 with punctures clearly indicated; interstriae each with a row of fine granules on both disc and declivity.

TYPE LOCALITY.—Thirty km north of Cañon Zancudo, Zulia, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 136 paratypes were collected at the type locality on 4 June 1970, 10 m elevation, No. 522, from an unidentified vine (liana), by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Chramesus sollicitatus*, n. sp.

This species might possibly be allied to *rotundatus* Chapuis, but it is distinguished by the smaller size, by the larger tuft of hair on the scape, by the much more deeply excavated male frons, and by other characters.

MALE.—Length 1.6 mm (paratypes 1.4-1.6 mm), 1.6 times as long as wide; color brown.

Frons shallowly, broadly concave from epistomal margin to well below upper level of eyes; middle third of lateral margins distinctly, subacutely, not strongly elevated, indistinctly serrate; surface deeply reticulate above, irregularly, indistinctly rugose-reticulate below; vestiture inconspicuous. Antennal scape elongate, apex slightly produced and ornamented by about a dozen hairlike setae equal in length to scape; club moderately small for this genus.

Pronotum 0.73 times as long as wide; widest at base, sides rather strongly, arcuately convergent to broadly rounded anterior margin; surface reticulate, fine and moderately coarse, shallow punctures intermixed; anterolateral areas with a few irregularities, not clearly asperate. Vestiture of moderately abundant, slender scales.

Elytra 1.0 times as long as wide; sides straight and parallel on less than basal half, broadly rounded behind; striae distinctly im-

pressed, punctures moderately coarse, rather shallow; interstriae weakly convex, almost smooth, dull, almost twice as wide as striae, each with a row of rather coarse granules and minute, confused punctures. Declivity rather steep, broadly convex; striae more narrowly impressed, punctures smaller, less distinct; interstriae narrower, less convex, granules smaller and more widely spaced. Vestiture of small, abundant ground scales, each slightly longer than wide, and interstitial rows of long scales, each almost three times as long as ground scales, six to eight times as long as wide, about half as long as distance between scales within a row or between rows.

FEMALE.—Similar to male except frons convex, a transverse callus at level of antennal insertion, central fovea indistinct; scape not ornamented by hair; four or five rather coarse asperities in anterolateral area of pronotum; scales in ground cover of interstriae slender, up to four times as long as wide.

TYPE LOCALITY.—Campamento Rio Grande, 30 km east of Palmar, Bolivar, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 13 paratypes were taken at the type locality on 12 June 1970, 200 m elevation, No. 569, from an unidentified vine (liana), by S. L. Wood. The parental galleries were oblique to longitudinal.

The holotype, allotype, and paratypes are in my collection.

*Chramesus peniculus*, n. sp.

This species is allied to *rotundatus* Chapuis, but it is distinguished by the much smaller size, and by the very long interstitial bristles.

MALE.—Length 1.2 mm (paratypes 1.2-1.3 mm), 1.5 times as long as wide; color dark brown with pale scales.

Frons rather deeply, broadly concave from epistomal margin to slightly above eyes; lateral margins subacutely elevated, with a rather strongly elevated, subquadrate denticle on margin slightly above level of antennal insertion; surface strongly reticulate, punctures not evident; vestiture sparse, inconspicuous. Antennal scape ornamented at apex by a tuft of perhaps a dozen long hairlike setae as long as scape; club rather small for this genus.

Pronotum 0.70 times as long as wide; widest near base, sides strongly arcuate, converging to moderate constriction just before rather broadly rounded anterior margin; surface strongly reticulate, punctures moderately close, small and

rather large intermixed, becoming finely then rather coarsely asperate toward anterolateral areas. Vestiture of moderately abundant, slender and stout, short, semirecumbent bristles.

Elytra 0.90 times as long as wide; sides straight and parallel on less than basal half, very broadly rounded behind; 13 crenulations on basal margin, submarginal row extending to striae 5; striae rather strongly impressed, punctures small, rather shallow; interstriae slightly wider than striae, evidently weakly convex, devoid of granules, punctures very small. Declivity beginning at middle, moderately steep, broadly convex; sculpture about as on disc except striae and interstriae somewhat narrower. Vestiture of ground cover of abundant, short, interstitial scales, each scale about as long as wide; and erect, flattened bristles about four times as long as ground cover, spaced between rows by distances about equal to length of a bristle, within a row by one to three times length of a bristle. Broad strial grooves smooth, except for punctures, and glabrous.

FEMALE.—Similar to male except frons weakly convex, a weak, transverse callus just above level of antennal insertion, an obscure fovea at center; scape not ornamented by hair; anterolateral crenulations on pronotum slightly larger; interstitial bristles wider, more nearly scalelike on basal half of elytra.

TYPE LOCALITY.—Thirty km north of Cañon Zancudo, Zulia, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 14 paratypes were taken at the type locality on 4 June 1970, 10 m elevation, No. 522, from the same unidentified vine (liana) that contained *vinealis*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

#### *Chaetophloeus andinus*, n. sp.

This is the second species of *Chaetophloeus* known to occur in South America. It is allied to *brasiliensis* Blackman, but it may be distinguished by the larger size, by the more deeply emarginate epistoma, by the more deeply excavated and elaborately ornamented male frons, and by the longer, erect, interstitial setae.

MALE.—Length 1.9 mm (paratypes 1.3-1.8 mm), 1.5 times as long as wide; color very dark brown, with pale and light brown vestiture.

Frons deeply concave to inner margin of eye from epistomal margin to vertex; epistomal margin very deeply, broadly emarginate, less than three times as wide as deep, a pair of marginal

tubercles directed orad near median line; lateral and upper margins ornamented by a dense brush of long hair, tips of some setae on vertex extend beyond epistomal margin. Antennal club large, 1.9 times as long as wide; three sutures weakly procurved, suture 3 two-thirds club length from base.

Pronotum as in *brasiliensis*, with surface sculpture finer, one paired group of three tubercles in anterolateral areas; setae of two types, some slender, short, others scales one and one-half to two times as long as wide except three times as long on anterior margin and in small area near scutellum.

Elytra as in *brasiliensis* except strial punctures slightly smaller; interstriae about three times as wide as striae; erect interstitial scales more numerous, in less definite rows, each erect scale about twice as long as wide on disc, up to five times as long as wide on declivity.

FEMALE.—Similar to male except frons weakly convex; epistomal emargination more than four times as wide as deep; frontal vestiture much shorter, uniformly distributed; pronotum with two paired groups of tubercles.

TYPE LOCALITY.—Three km east of Lagunillas, Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 26 paratypes were taken at the type locality on 12 January 1970, 1000 m elevation, No. 237, from *Mimosa* twigs and No. 236 and 239 from an unidentified vine, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

#### *Liparthrum carapae*, n. sp.

This is the first record of this genus from South America. As in *americanum* Wood the male frons of this species is broadly concave, but it differs by the restriction of frontal pubescence to the vertex, by the much finer, less abundant vestiture on pronotum and elytra, by the obsolescent strial punctures, and by the larger size.

MALE.—Length 1.1 mm (paratypes 0.8-1.2 mm), 2.4 times as long as wide; color dark reddish brown.

Frons rather deeply concave from eye to eye from epistomal margin to vertex; surface shining, punctures very minute, rather abundant; concavity apparently glabrous, upper margin ornamented by a brush of long hair, tips of some setae reaching middle of concavity. An-

tenna club rather large, broadly oval, devoid of sutures.

Pronotum 1.0 times as long as wide; sides subparallel, feebly arcuate on basal half, rather broadly rounded in front; moderately declivous on anterior fourth; surface subreticulate, with minute, isolated asperities on median area almost to base, punctures not evident. Vestiture of fine, recumbent hair and a few erect, slender scales.

Elytra 1.4 times as long as wide, 1.4 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; each basal margin armed by six crenulations; striae not impressed, punctures almost totally obsolete, a few feebly impressed near center of disc; interstriae minutely irregular, uniseriately granulate. Declivity steep, convex; as on disc. Vestiture consisting of very fine, rather short, recumbent, striae hair; and rows of erect, interstitial scales, each scale about half as long as distance between rows, each about three times as long as wide on disc, on declivity almost as wide as long.

FEMALE.—Similar to male except frons convex, minutely reticulate-granulate, glabrous; anterior margin of pronotum armed by eight teeth; pronotal asperities much larger; striae more distinctly impressed on declivity.

TYPE LOCALITY.—Campamento Rio Grande, 30 km east of Palmir, Bolivar, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 230 paratypes were collected at the type locality on 12 June 1970, 200 m elevation, No. 572, *Carapa guianensis*, S. L. Wood. The beetles infested the phloem of branches and bole of the host. The galleries were typical of the genus.

The holotype, allotype, and paratypes are in my collection.

*Liparthrum meridensis*, n. sp.

This species has the concave male frons of *americanum* Wood, but it may be distinguished from other species of this group by the elevated interstriae 3 and by the absence of scales on declivital interstriae 2.

MALE.—Length 0.8 mm (paratypes 0.75-0.85 mm), 2.2 times as long as wide; color very dark brown.

Frons concave from eye to eye, from epistoma to upper level of eyes; surface reticulate, punctures minute, rather abundant; vestiture moderately abundant laterally and above, rather abundant and apparently part of setae remarkably spatulate on their distal halves.

Pronotum 0.86 times as long as wide; widest near base, sides rather strongly arcuate on basal half, narrowly rounded in front; surface subreticulate, with rather abundant, isolated granules or minute asperities on median two-thirds to base.

Elytra 1.4 times as long as wide, 1.6 times as long as pronotum; basal margins armed by six pairs of crenulations; striae not impressed, punctures small, moderately deep; interstriae as wide as striae, smooth, uniseriate punctures feebly vulcanate. Declivity steep, convex; interstriae 1 and 3 distinctly elevated, 2 flat. Vestiture of rather fine, short, recumbent striae and interstitial hair, and interstitial rows of erect scales; each scale about twice as long as wide; declivital interstriae 2 and lower half of 4 devoid of scales.

FEMALE.—Similar to male except frons convex, reticulate, with a few obscure punctures; anterior margin of pronotum armed by four teeth; anterior slope of pronotum armed by about a dozen coarse asperities; striae punctures about twice as large, deep; declivital interstriae 1 and 3 more strongly elevated, about a fourth as high as wide.

TYPE LOCALITY.—Five km east Lagunillas, Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 71 paratypes were collected at the type locality on 12 January 1970, 1000 m elevation, No. 238, from a composite shrub, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Cladoctonus boliviae* (Wood)

*Hoplitophthorus boliviae* Wood, 1961, Gt. Basin Nat. 21:106 (Holotype, female; Route between Boyuilbe and Charagua via Cueva, Ingrid, etc., Bolivia; U.S. Nat. Mus.).

A long series of this species was taken at Campo Capote, 27 km northeast of Montoya, Santander, Colombia, 2-VII-70, 150 m elevation, No. 601, from *Pseudoolmedia*, by me. The apparently monogamous beetles entered the bark through tunnels made by an equally small *Phloeotribus*. In the cambium region they appropriated one or both of the *Phloeotribus* egg galleries and extended or branched from it in constructing their own tunnels that engraved both phloem and xylem. The beetles worked more or less in pairs along one branch of the tunnel while other pairs constructed their tunnels as branches of the tunnel of their companions. Usually about two to four branches were formed from one original *Cladoctonus*



entry. Larval mines were in the phloem, but were completely confused with those of the *Phloeotribus*. These tunnels were almost identical to those of *Carphodicticus cristatus* Wood.

*Pycnarthrum inornatum*, n. sp.

This species, at least superficially, is very similar to *hispidum* (Ferrari) except that all long setae or bristles are absent from the entire body; the vestiture consists only of the very short ground cover of scales.

FEMALE.—Length 1.6 mm, about 2.2 times as long as wide (elytra spread slightly); color very dark brown, elytra lighter.

Frons weakly convex except indistinctly concave on central third; eyes separated above by distance greater than width of an eye; surface reticulate, punctures moderately coarse, rather close, sharply, not deeply impressed; vestiture of minute hair and scales, each not longer than twice diameter of a puncture. Antennal club and flagellum missing on type.

Pronotum about equal in length and width; widest at middle, sides weakly arcuate, broadly rounded in front; surface shining, subreticulate on anterior surface, with minute points moderately abundant, punctures moderately coarse, deep, close, interspaces not wider than distance equal to diameter of a puncture. Vestiture inconspicuous, consisting of short, slender hair and on anterior half some equally short, stout setae intermixed.

Elytra about 1.4 times as long as wide; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae 1 moderately, others not impressed, punctures coarse, deep, rather close; interstriae as wide as striae, subshining, very obscurely subreticulate, punctures small, moderately abundant, confused. Declivity steep, broadly convex; interstriae 2 somewhat impressed, narrower than others. Vestiture consisting of minute striae hair on disc only, and short, confused, subplumose, narrow, interstitial scales equally abundant on disc and declivity; rows of erect bristles found in other species of this genus absent.

TYPE LOCALITY.—Olanchito, Yoro, Honduras.

TYPE MATERIAL.—The female holotype was collected at the type locality on 7 October 1949, at light, by E. C. Becker.

The holotype is in my collection.

*Pycnarthrum funerium*, n. sp.

This species is allied to *hispidum* (Ferrari) but may be distinguished by the very small

size, by the black color, by the small, shallowly impressed striae punctures, and by the more slender, less plumose setae in the elytral ground vestiture.

FEMALE.—Length 1.4 mm (paratypes 1.3-1.4 mm), 2.2 times as long as wide; color black.

Frons rather strongly, evenly convex to epistoma; surface reticulate, becoming subrugulose below, punctures fine, shallow, obscure; eyes separated by distance greater than width of an eye; vestiture of rather sparse, stout, erect, moderately long, white bristles. Antennal club 2.0 times as long as wide, two sutures indicated.

Pronotum 0.93 times as long as wide; widest at or slightly in front of middle, sides weakly arcuate, very broadly rounded in front; surface strongly reticulate on anterior third, obscurely reticulate behind, subshining, punctures small, close, moderately deep. Vestiture of fine hair and stout bristles intermixed over entire surface, moderately long.

Elytra about 1.4 times as long as wide (elytra spread slightly); sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae not impressed, punctures rather small, distinct, very shallow; interstriae almost twice as wide as striae, evidently obscurely subreticulate, median row of punctures uniseriate, very small but almost twice as large as confused supplementary punctures. Declivity rather steep, rather narrowly convex, not at all impressed; essentially as on disc, except striae punctures very slightly deeper. Vestiture consisting of short, interstitial ground vestiture of rather fine (anteriorly) to stout (posteriorly) semi-recumbent hairlike bristles, a few exhibit indications of being subplumose, and longer, erect, uniseriate rows of stout, almost scalelike setae, each erect bristle slightly less than twice as long as ground vestiture and about four to six times as long as wide; not longer on declivity.

TYPE LOCALITY.—La Ceiba, Atlantida, Honduras.

TYPE MATERIAL.—The female holotype was taken at the type locality 10 June 1949, at light, by E. C. Becker. Three female paratypes bear identical data except one was taken on 27 May 1949 and two on 29 May 1949.

The holotype and paratypes are in my collection.

*Pycnarthrum fici*, n. sp.

This species superficially resembles *hispidum* (Ferrari) but may be distinguished by the deeply concave male frons, by the pale yellow mature body color, by the more narrowly convex

elytral declivity, and by the shorter elytral vestiture.

MALE.—Length 1.7 mm (paratypes 1.6-1.7 mm), 2.2 times as long as wide; color pale yellow.

Frons rather deeply concave from upper level of eyes to epistomal margin; surface reticulate, finely granulate; eyes rather narrowly separated above, separated by distance equal to 1.5 times width of an eye; vestiture of rather fine, short, moderately abundant setae. Antennal club 1.6 times as long as wide; sutures 1 and 2 distinct, 3 obscurely indicated.

Pronotum proportions and outline as in *hispidum*; surface reticulate on anterior third, obscurely subreticulate behind, punctures uniformly rather small, shallow, close. Vestiture very short, of fine and stout setae intermixed.

Elytra 1.4 times as long as wide; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; striae weakly impressed, punctures very shallow, obscurely impressed, of moderate size, interstriae about one and one-half times as wide as striae, surface not regular, perhaps very minutely rugulose, punctures minute, many very minutely elevated particularly along median row. Declivity rather steep, convex; striae and interstriae slightly narrower than on disc, striae more distinctly impressed, punctures less distinct. Vestiture consisting of short, stout, moderately abundant ground cover mostly in indefinite marginal rows on each interstriae, not subplumose, and interstitial rows of erect, stout bristles, each bristle about one and one-third times as long as ground setae, very slightly shorter in length than width of an interstriae, at least six times as long as wide.

FEMALE.—Similar to male except frons moderately convex from upper level of eyes to near epistoma; surface very finely subrugulose.

TYPE LOCALITY.—Olanchito, Honduras.

TYPE MATERIAL.—The male holotype and four paratypes were collected at the type locality on 21 June (type), 15 and 19 May 1949, at light, by E. C. Becker. The female allotype and 40 paratypes were taken at La Ceiba, Honduras, on various dates from May to July 1949, at light, by E. C. Becker. Eighty-seven paratypes were taken at 5 km west of El Pino (near southeastern shore of Lake Maracaibo), Merida, Venezuela, on 20 October 1969, 10 m elevation, No. 143, from strangler fig, by S. L. Wood. The gallery systems were basically as in *hispidum*.

The holotype, allotype, and paratypes are in my collection.

### *Pycnarthrum perditum*, n. sp.

This species and *lucidum* Wood have the setae on the basal half of the elytra much more slender and the erect bristles longer than in other representatives of the genus. From *lucidum* this species is distinguished by the larger, more widely spaced pronotal punctures, by the more abrupt slope of the elytral declivity, and by the less strongly impressed male frons.

MALE.—Length 1.3 mm (allotype 1.6 mm), 2.3 times as long as wide; color dark brown, elytra somewhat lighter.

Frons weakly convex except flattened in median area on lower half; surface reticulate, rather finely, shallowly punctured, a conspicuous median fovea at center; eyes separated above by 1.4 times width of an eye. Antennal club 2.0 times as long as wide; sutures 1 and 2 indicated.

Pronotum proportions, outline and sculpture as in *hispidum* except punctures uniformly rather large, deep, not as close; vestiture of fine hair except intermixed with stouter setae on margins and on anterior fifth.

Elytra 1.5 times as long as wide; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; striae I feebly, others not impressed, punctures moderately large, rather deep; interstriae as wide as striae, punctures of two sizes, a median row of small punctures and less abundant, very minute punctures on margins of interstriae. Declivity rather steep, convex; striae distinctly impressed, narrower than on disc; interstriae weakly convex. Vestiture of fine striae hair and equally fine, short, recumbent, sparse, interstitial hair, and interstitial rows of longer, erect, slender bristles, each bristle one and one-half times as long as ground vestiture, equal in length to width of an interstriae, stout, more than six times as long as wide.

FEMALE.—Similar to male except frons more strongly convex to epistoma, interstitial bristles more slender.

TYPE LOCALITY.—La Ceiba, Atlantida, Honduras.

TYPE MATERIAL.—The male holotype and female allotype were taken at the type locality on 26 August 1949, at light, by E. C. Becker.

The holotype and allotype are in my collection.

### *Pycnarthrum lucidum*, n. sp.

This species is allied to *perditum* Wood, but may be distinguished by the concave male frons, by the closer, finer, pronotal punctures, by the less steep elytral declivity, by the larger, deeper

strial punctures, and by the less abundant, finer pronotal and elytral vestiture.

MALE.—Length 1.7 mm (paratypes 1.5-1.9 mm), 2.3 times as long as wide; color brown, elytra lighter.

Frons moderately concave from upper level of eyes to epistoma, a shining, transverse callus on median half of epistoma, a pair of calli in lateral areas of concavity just above level of antennal insertion; surface shining, obscurely reticulate; punctures rather fine, deep, rather close; eyes separated by distance equal to width of an eye. Antennal club 1.6 times as long as wide, sutures 1 and 2 distinct, 3 obscurely indicated.

Pronotum proportions and outline as in *perditum*; surface brightly shining except obscurely reticulate on anterior third; minute points present, punctures rather small, deep, close. Vestiture mostly abraded, very fine, a few coarse setae in anterolateral areas.

Elytra 1.4 times as long as wide; sides straight and parallel on basal two-thirds, rather narrowly rounded behind; striae weakly impressed, punctures coarse, close, moderately deep; interstriae slightly wider than striae, almost smooth, shining, punctures very fine, in three obscure ranks, median row very slightly larger. Declivity rather steep, convex; striae narrowly impressed, narrower than on disc; interstriae twice as wide as striae, rather weakly convex. Vestiture consisting of fine, short strial hair and interstitial short ground cover of very fine hair on disc becoming scalelike on declivity, and interstitial rows of erect bristles, each bristle almost twice as long as ground cover, equal in length to width of an interstriae, about six to eight times as long as wide.

FEMALE.—Similar to male except frons rather strongly convex from upper level of eyes to epistoma.

TYPE LOCALITY.—Finca Gromaco on Rio Coto Brus, Puntarenas, Costa Rica.

TYPE MATERIAL.—The male holotype and four paratypes were collected at the type locality on 14 July 1963, 500 m elevation, No. 60, from a broken limb, by S. L. Wood. The allotype and 63 female paratypes were taken at Playón, San José, Costa Rica, 20 m elevation, No. 117, in Cedro amarga, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Pycnarthrum carinatum*, n. sp.

This species is very similar to *fici* Wood, but it may be distinguished by the sharply elevated,

transverse epistomal carina of the male, and by the longer, very stout interstitial bristles.

MALE.—Length 1.8 mm, 2.1 times as long as wide; color very dark brown, elytra lighter.

Frons deeply concave from just below upper level of eyes to epistoma as in *fici*; epistoma armed by an acutely elevated, transverse carina on median fourth; eyes separated above by 2.2 times width of an eye. Other features of head and pronotum essentially as in *fici*.

Elytra 1.25 times as long as wide; outline as in *fici*; striae weakly impressed, punctures rather small, distinctly not deeply impressed, not at all confluent or rugulose; interstriae shining, almost twice as wide as striae, median row of punctures fine, uniseriate, punctures on margins of each interstriae minute. Declivity rather steep, convex; strial punctures deeper than on disc, very close, shining, not at all confluent or reticulate. Vestiture of fine, short, recumbent strial hair and rows of short, rather slender, subplumose scales on each margin of each interstriae; and interstitial rows of erect very stout bristles, each bristle slightly shorter than width of an interstriae, each about four times as long as wide.

TYPE LOCALITY.—Near Leonpampa, Department Huanuco, Peru.

TYPE MATERIAL.—The unique male holotype was collected at the type locality between 11 and 30 December 1937, 800 m elevation, in jungle, No. 3811, by F. Woytkowski.

The holotype is in my collection.

*Pycnarthrum subcarinatum*, n. sp.

This species is very closely related to *carinatum* Wood except as noted below.

MALE.—Length 1.9 mm (paratypes 1.6-1.9 mm), 2.1 times as long as wide; color very dark brown, vestiture pale.

Frons as in *carinatum* except epistomal carina weakly developed, shorter, not acutely produced. Pronotum as in *carinatum* except vestiture finer. Elytra as in *carinatum* except erect interstitial setae slightly longer and much more slender, each bristle six or more times as long as wide.

FEMALE.—Similar to male except frons convex, epistomal elevation not indicated.

TYPE LOCALITY.—Eight km southwest of Bumbum, Barinas, Venezuela.

TYPE MATERIAL.—The holotype, allotype, and 10 paratypes were taken at the type locality on 11 February 1970, 150 m elevation, No. 327,



from Charo Blanco (*Brosmium* sp.), by S. L. Wood.

*Pycnarthrum brosmii*, n. sp.

This species is allied to *lucidum* Wood, but it may be distinguished by the much finer pronotal and elytral discal punctures, by the more strongly impressed elytral declivity, and by the flattened male frons.

MALE.—Length 2.0 mm (paratypes 1.9-2.1 mm), 2.3 times as long as wide; color reddish brown.

Frons flattened from just below upper level of eyes to epistoma; surface shining, obscurely reticulate, punctures fine, moderately close; vestiture rather sparse, fine, erect, moderately long; eyes very large, coarsely faceted, separated above by a distance equal to width of an eye. Antennal club 1.8 times as long as wide, sutures 1 and 2 indicated.

Pronotum equally as long as wide; widest in front of middle, broadly rounded in front; surface shining, except subreticulate on anterior third, a few minute points, punctures fine, rather deep, moderately close; vestiture of fine, short bristles, a few longer setae in marginal areas.

Elytra 1.3 times as long as wide; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae 1 slightly, others feebly or not at all impressed, punctures rather small, moderately close; interstriae twice as wide as striae, almost smooth, median row of punctures uniseriate, fine, becoming finely then rather conspicuously granulate in progressing from anterior to posterior areas, supplementary punctures on margins of each interstriae minute, irregularly spaced. Declivity rather steep, broadly flattened; strial punctures conspicuously larger and deeper than on disc; interstriae slightly wider than striae, 1 moderately elevated, 2 distinctly impressed, all interstriae with upper half uniseriately, rather finely granulate. Vestiture consisting of ground cover of fine, short, moderately abundant strial and interstitial hair, strial setae absent on declivity, interstitial ground cover on declivity of subplumose scales; and interstitial rows of erect bristles, each bristle slightly more than twice as long as ground cover, about equal in length to width of an interstriae, each at least eight times as long as wide.

FEMALE.—Similar to male except frons moderately convex from upper level of eyes to epistoma.

TYPE LOCALITY.—Nine km south of Barrancas, Barinas, Venezuela.

HOST.—*Brosmium* sp. (Charo amarillo).

TYPE MATERIAL.—The male holotype, female allotype, and six paratypes were collected at the type locality on 1 October 1969, 150 m elevation, No. 23, from Charo amarillo, by S. L. Wood; 12 paratypes bear identical data except 5 November 1969, No. 106; two paratypes are labeled 8 km SW Bumbum, Barinas, Venezuela, 11-II-70, No. 319; two paratypes 10 km SE Miri, Barinas, Venezuela, 8-II-70, No. 299; six paratypes 27 km NE Montoya, Santander, Colombia, 2-VII-70, No. 591; and 24 paratypes 8 km S Colonia (near Buenaventura), Valle de Cauca, Colombia, 9-VII-70, No. 645, all from the same host and collector.

*Gynnochilus alni*, n. sp.

This species is rather similar to *reitteri* Eichhoff, but may be distinguished by the concave male frons, by the elongate body, by the absence or near absence of sutures on the antennal club, and by the obsolescent strial punctures on the disc.

MALE.—Length 2.2 mm (paratypes 2.0-2.2 mm), 2.2 times as long as wide; color light brown to bicolored.

Frons rather shallowly, broadly concave from well above eyes to epistoma; surface strongly reticulate, a transverse arcuate callus at and slightly above level of antennal insertion, punctures fine, shallow, moderately abundant; vestiture fine, very short, sparse. Antennal club 1.3 times as long as wide, sutures not clearly evident except basal portion slightly sclerotized to point where suture 1 normally located.

Pronotum 0.86 times as long as wide; outline, sculpture and vestiture as in *reitteri* except posterior area finely, densely punctured.

Elytra 1.3 times as long as wide; sides almost straight and parallel on more than basal half, narrowly rounded behind; striae 1 distinctly, others feebly or not at all impressed, punctures small, scarcely distinguishable from those of interstriae; interstriae three to four times as wide as striae, obscurely subreticulate, rather finely, densely punctured. Declivity commencing at middle, moderately steep, convex; strial punctures small, distinct; interstriae 1 weakly elevated. Vestiture of short, recumbent, very abundant, fine hair; and sparse interstitial rows of erect bristles, those on even-numbered interstriae only slightly longer than ground vestiture, on disc only, those on odd interstriae slender, equal in length to width of an interstriae on both disc and declivity.

FEMALE.—Similar to male except frons weakly convex, callus present; short interstitial bristles on even-numbered interstriae slightly longer, extending to declivity.

TYPE LOCALITY.—Ten km SE Teziutlán, Puebla, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 24 paratypes were taken at the type locality, from *Alnus*, on 2 July 1967, 1600 m elevation, No. 141, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Scolytodes ommateus*, n. sp.

This unique species is distinguished from all other species in the genus by the large, very narrowly separated eyes on the vertex, by the strongly impressed lower half of the female frons, by the fine, greatly reduced vestiture, and by the sulcate elytral declivity. It evidently represents a new species group in the genus. It would be placed in *Pycnarthrum* except for the antennal club.

FEMALE.—Length 2.0 mm (paratypes 1.7-2.0 mm), 2.6 times as long as wide; color yellowish to reddish brown.

Frons very strongly concave on upper half, abruptly, rather strongly impressed on lower half; entire surface reticulate, with rather obscure, shallow, rather fine, moderately sparse punctures; vestiture fine, sparse, inconspicuous. Eyes greatly enlarged, approximate above, separated by a distance equal to less than diameter of two facets. Antennal club with suture 1 partly septate, others obsolete.

Pronotum 1.2 times as long as wide; widest on basal fourth, sides almost straight and parallel on basal two-thirds, rather broadly rounded in front; moderately declivous on anterior fourth; surface reticulate, rather fine, shallow, moderately abundant. Vestiture minute, inconspicuous, a few longer hairs on anterior margins.

Elytra 1.5 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae not impressed, punctures shallow, moderately large, in somewhat indefinite rows; interstitial punctures slightly smaller than those of striae, not easily distinguished. Declivity steep, convex and rather narrowly bisulcate; declivital punctures fine, confused, indistinct; sutural interspace moderately elevated, a moderately deep, narrow sulcus on interstriae 2; lateral areas convex. Vestiture consist-

ing of minute, fine, strial and interstitial hair, and a few long, erect hairlike setae on and near declivity.

MALE.—Similar to female except frons not impressed, convex.

TYPE LOCALITY.—Eight km south of Colonia (near Buenaventura), Valle de Cauca, Colombia.

TYPE MATERIAL.—The female holotype, male allotype, and 97 paratypes were taken at the type locality on 9 July 1970, 70 m elevation, No. 624, from *Clusia* twigs, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Scolytodes punctifer*, n. sp.

This pubescent species is allied to *punctatus* Eggers, but it may be distinguished by the much smaller strial punctures with the interstitial punctures much smaller than those of the striae, by the smooth pronotum surface with smaller punctures, and by the more abundant elytral hair.

MALE.—Length 1.5 mm, 2.0 times as long as wide; color very dark brown, elytra slightly lighter, abundant vestiture pale.

Frons convex, a slight transverse impression just above epistoma; surface obscurely reticulate, punctures rather small, deep, moderately close; vestiture fine, sparse, short. Sutures of antennal club almost obsolete.

Pronotum 0.95 times as long as wide; sides parallel, feebly arcuate on basal half, broadly rounded in front; surface obscurely reticulate behind, distinctly reticulate toward anterior margin, punctures coarse, deep, close. Vestiture fine, abundant, moderately long.

Elytra 1.3 times as long as wide; sides almost straight and parallel on basal two-thirds; striae 1 feebly, others not impressed, punctures rather coarse, deep; interstriae smooth about one and one-half times as wide as striae, punctures rather large, uniseriate except slightly confused on 2. Declivity convex, rather steep; all punctures distinctly smaller, otherwise similar to disc. Vestiture of rather abundant, fine, erect, strial and interstitial hair, and slightly longer, uniseriate rows of slightly coarser, interstitial hair; each long hair about one and one-half times as long as distance between rows.

TYPE LOCALITY.—Volcan Irazu, Cartago, Costa Rica.

TYPE MATERIAL.—The unique male holotype was taken at the type locality on 26 September

1963, 2300 m elevation, No. 207, from a twig of *Oreopanax nubigenus*, by S. L. Wood.

The holotype is in my collection.

*Scolytodes hirsutus*, n. sp.

This species is allied to *punctifer* Wood, but it may be distinguished by the fine, confused elytral punctures, by the strongly reticulate, dull pronotal surface, and by the much finer pronotal punctures.

MALE.—Length 1.7 mm, 2.1 times as long as wide; color black.

Frons moderately convex, surface strongly reticulate, punctures fine, deep, moderately abundant; vestiture inconspicuous.

Pronotum 0.95 times as long as wide; outline as in *punctifer*; surface strongly reticulate, dull, punctures fine, rather shallow, moderately abundant. Vestiture fine, rather abundant, moderately long.

Elytra 1.2 times as long as wide; outline as in *punctifer*; strial and interstitial punctures equal in size, small, rather shallow, interstitial punctures confused, those of striae distinguished with difficulty. Declivity convex, rather steep; punctures minute, confused. Vestiture of fine, long strial and interstitial hair, and slightly longer uniseriate rows of interstitial hair; each longer hair slightly longer than distance between rows.

TYPE LOCALITY.—Tapanti, Cartago, Costa Rica.

TYPE MATERIAL.—The unique male holotype was taken at the type locality on 2 July 1963, 1300 m elevation, No. 8, from an unidentified vine, by S. L. Wood.

The holotype is in my collection.

*Scolytodes crassus*, n. sp.

The position of this small, stout species is problematical, but the rows of very fine, strial and interstitial hair suggest a possible relationship to *hirsutus* Wood.

MALE.—Length 1.0 mm, 1.9 times as long as wide; color yellowish brown, apparently not fully colored.

Frons convex, surface obscurely reticulate, shining, punctures rather large, deep, not close; fine, moderately abundant toward epistoma.

Pronotum 0.94 times as long as wide; widest at base, sides indistinctly arcuate, converging very slightly on basal two-thirds, rather narrowly rounded in front; surface smooth and shining, punctures small, rather shallow, moderately close, irregularly spaced. Vestiture of short, very fine, moderately abundant recumbent hair.

Elytra 1.2 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae feebly if at all impressed, punctures large, moderately deep, close; interstriae almost as wide as striae, smooth, shining, punctures very fine, uniseriate, close. Declivity convex, rather steep; strial punctures gradually reduced to about two-thirds size on disc; interstriae slightly wider than striae, very feebly convex. Vestiture consisting of uniseriate rows of very fine, recumbent, moderately long strial and interstitial hair; in addition, odd-numbered interstriae on posterior half of elytra bear widely spaced, erect, spatulate bristles of moderate length, about six such bristles on each interstriae.

TYPE LOCALITY.—Barro Colorado Island, Canal Zone, Panama.

TYPE MATERIAL.—The male holotype was taken at the type locality between November 1952 and March 1953, presumably at light, by J. Zetek.

The holotype is in my collection.

*Scolytodes panuceus*, n. sp.

This species and *plicatus* Wood are unique in having unusually broad, costiform pronotal asperities. This species is distinguished from *plicatus* by the smaller, shallow strial and interstitial punctures, and by the very different sculpture of the female frons.

FEMALE.—Length 1.7 mm (male 1.5 mm), 2.4 times as long as wide; color yellowish brown.

Frons flattened from epistoma to upper level of eyes, surface minutely, densely pilose over almost entire flattened area; epistomal margin very slightly elevated, smooth, shining, a narrow median extension reaching level of antennal insertion; lateral and upper extreme margins bearing a row of long, yellow hair.

Pronotum and elytra as in *plicatus* except pronotal punctures slightly larger, strial and interstitial punctures much larger and deeper.

MALE.—Similar to female except frons convex, reticulate, punctures moderately large, shallow, rather sparse, subglabrous; pronotal asperities slightly larger; pronotal and elytral punctures distinctly finer.

TYPE LOCALITY.—La Ceiba, Atlantida, Honduras.

TYPE MATERIAL.—The female holotype was taken at the type locality on 7 June 1949, at



light, by E. C. Becker. The male allotype bears identical data except that it was taken on 17 June 1949.

The holotype and allotype are in my collection.

*Scolytodes micidus*, n. sp.

This species is very closely related to *tenuis* Wood, but it may be distinguished by the closely set bristles on all interstriae, by the finer interstitial punctures, and by the glabrous central area on the female frons.

FEMALE.—Length 1.4 mm (paratypes 1.2-1.4 mm), 2.9 times as long as wide; color almost black.

Frons flattened from epistoma to upper level of eyes, median third on lower half smooth, shining, slightly elevated, remaining area coarsely, closely, deeply punctured; punctured area bearing a tuft of long, yellow hair.

Pronotum 1.2 times as long as wide; sides rather strongly constricted on basal half, otherwise as in *tenuis* except posterior area smooth, shining (feebly reticulate in a few specimens).

Elytra 1.8 times as long as wide; outline and sculpture as in *tenuis*. Vestiture consisting of fine, short strial hair and long, erect interstitial bristles; each interstitial bristle slightly longer than distance between rows and between bristles within a row.

MALE.—Similar to female except frons convex, deeply, narrowly, transversely impressed above epistoma, surface coarsely, deeply punctured.

TYPE LOCALITY.—Four miles north of Totolapan, Oaxaca, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and 28 paratypes were collected at the type locality on 20 June 1967, 1100 m elevation, No. 68, in *Ficus*, by S. L. Wood. One paratype was taken at Palin, Esquintla, Guatemala, 19 May 1964, 300 m elevation, No. 683, S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Microborus lectus*, n. sp.

This species is allied to *boops* Blandford, but it is distinguished by the more widely separated eyes and elongate frons, by the more coarsely punctured pronotum, by the more strongly reduced punctures on striae 1 on the lower half of the declivity particularly in the male, and by the much more strongly elevated

male declivital interstriae 7 which continues to the apex.

MALE.—Length 1.5 mm (paratypes 1.4-1.5 mm), 2.8 times as long as wide; rather dark reddish brown.

Frons moderately convex, a slight summit just above level of antennal insertion, a weak, transverse impression just above epistoma; surface reticulate at sides and above, shining, with sparse, moderately coarse punctures; eyes separated by twice width of an eye.

Pronotum 1.4 times as long as wide; widest at base, sides feebly constricted, almost straight on basal three-fourths, rather broadly rounded in front; surface shallowly reticulate, punctures rather coarse, close, deep, oval. Glabrous.

Elytra 1.8 times as long as wide, 1.5 times as long as pronotum; outline about as in *boops* except apex narrower; striae strongly impressed, punctures large, deep, close; interstriae smooth, shining, strongly convex, as wide as striae, punctures fine, uniseriate, rather widely spaced. Declivity steep, convex; striae strongly impressed except lower half of 1, punctures strongly reduced, minute on 1; interstriae strongly narrowed on left side, moderately so on right, 2 feebly elevated and armed by about three to six small teeth (usually different numbers on right and left sides), 3 and 4 convex but unarmed and continuing to 7, 7 strongly, acutely elevated and continuing to apex. Vestiture confined to declivity, of coarse, rather short hair; a few scales on interstriae 1 and 2.

FEMALE.—Similar to male except pronotum more finely sculptured; elytral declivity sculptured about as on disc except interstitial punctures very finely granulate and punctures on striae 1 much smaller; declivital interstriae 7 only moderately elevated as in female *boops*; scalelike setae on declivity absent.

TYPE LOCALITY.—Carbonera Experimental Forest, about 50 km (airline) northwest of Merida, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 19 paratypes were collected at the type locality on 14 October 1969, 2500 m elevation, No. 57, from *Clusia* bark, by S. L. Wood. Most of the galleries were at the fracture point between the outer and inner bark of *Clusia* logs from which other bark beetles had previously emerged. Evidently several successive generations were produced without emerging from the host between generations.

The holotype, allotype, and paratypes are in my collection.

*Scolytus barinensis*, n. sp.

The frons resembles *proximus* Chapuis, the elytra are as in *cristatus* Wood. Sternum 2 resembles *cristatus*, but it is much more steeply elevated and more finely sculptured, and the median elevated process arises at the anterior margin of sternum 2, it is slightly thicker, of rather high uniform height and descends abruptly behind.

MALE.—Length 2.6 mm (paratypes 2.0-2.9 mm), 1.7 times as long as wide; color almost black.

Frons broadly, weakly convex, a slight transverse impression on lower third, a moderately large, rounded, shining tubercle just above middle, tubercle convex and equally precipitous on all sides; surface obscurely reticulate on upper half, fine, moderately deep punctures arranged in obscure, shallow aciculate grooves, punctures on lower half replaced by close, rounded granules of equal size; epistomal margin smooth; vestiture of moderately abundant, very fine, long hair, slightly longer laterally. Antennal club with suture 1 indicated.

Pronotum 0.97 times as long as wide; widest one-third length from base, sides weakly arcuate, converging slightly on basal two-thirds then moderately constricted laterally just before broadly rounded anterior margin; surface smooth shining, punctures on disc slightly oval in shape, rather close, moderately large for this genus, about two to three times larger in lateral areas. Glabrous.

Elytra outline as in *cristatus*; striae and interstriae equally, narrowly, strongly impressed, punctures moderately large, rather deep; interspaces between rows smooth and shining, about as wide as punctures. Glabrous except for a few scattered bristles on or near declivity.

Sternum 2 vertical, rather finely, deeply punctured; armed on slightly more than anterior half by a median process that begins in cleft of anterior margin of segment 2, process rising abruptly to maximum height and continuing at this level to its posterior extremity, rather abruptly terminated behind; abdominal sterna 2-5 with moderately abundant erect, rather long bristles.

FEMALE.—Similar to male except frontal tubercle not as high, granules on lower half of frons more poorly developed to obsolete.

TYPE LOCALITY.—Campamento Caehicamo, 40 km east of Canton, Barinas, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 97 paratypes were taken at the

type locality on 8 March 1970, 70 m elevation, No. 356, from a large vinelike tree known locally as Hevecito, by S. L. Wood. The parental tunnels were biramose and transverse; two females were associated with each male.

The holotype, allotype, and paratypes are in my collection.

*Scolytopsis orinocanus*, n. sp.

This species apparently is allied to *peruanus* Eggers. From the key and description of the female (Eggers, 1937, Rev. de Ent. 7:83) it is distinguished from Eggers' species by the broadly oval or round punctures on the female frons, and the broadly raised median area of the epistoma (not carinate), by the uniformly short, frontal vestiture and, evidently, by the coarser pronotal punctures and shorter elytral setae.

FEMALE.—Length 3.0 mm (paratypes 2.9-3.3 mm), 2.0 times as long as wide; very dark brown to black, pronotum usually darker, scales rather dark.

Frons broadly convex, a distinct, transverse impression above epistoma, median area of impression broadly, distinctly elevated (not carinate); epistoma rather well developed, slightly elevated; surface smooth, shining, with dense, deep, moderately coarse, round or broadly oval punctures; vestiture of short, moderately abundant, coarse setae of almost uniform length.

Pronotum 0.95 times as long as wide; widest one-third length from base, sides rather strongly arcuate, converging only slightly before anterior third, rather broadly rounded in front; surface smooth, shining, with a few very minute, impressed points, punctures rather fine (almost as large as in *puncticollis* Blandford), oval on disc, up to twice as large, subcircular and closer in lateral areas, a row of larger punctures at lateral and basal margins. Glabrous.

Elytra 1.3 times as long as wide, 1.3 times as long as pronotum; slightly narrower than pronotum; sides shallowly emarginate on basal half, rather broadly rounded behind; striae and interstriae on basal half equally, rather deeply impressed, punctures moderately coarse, deep, mostly of about equal size; on posterior half interstriae gradually, less strongly impressed until almost flat toward apex, interstitial punctures also decreasing in depth and clarity posteriorly, central third of each interstriae on posterior half etched, dull, spreading to entire interstriae, then to entire declivital surface near apex; costal margin near apex almost smooth. Vestiture of slender, suberect scales; each scale slightly shorter than distance between rows; very

slightly more slender and equal in length to *puncticollis*.

MALE.—Similar to female except flat from vertex to epistoma (no arch), without elevations except a feeble one at epistoma, central area smooth and shining, lateral areas with dense, long pubescence slightly shorter than in other species.

TYPE LOCALITY.—Campamento Rio Grande, 30 km east of Palmar, Bolivar, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 4S paratypes were taken at the type locality on 12 June 1970, 70 m elevation, No. 573, in *Terminalia guianensis*, by S. L. Wood. These monogamous beetles made biramous, longitudinal tunnels similar to those of *Scolytus*.

The holotype, allotype, and paratypes are in my collection.

#### *Carphodicticus*, n. gen.

Blandford (1895, Ann. Mag. Nat. Hist., Ser. 6, 15:317) described from Ceylon a peculiar genus, *Craniodicticus*, "of doubtful relationship," which he placed in the Scolytidae but suggested a possible relationship to *Schedlarius* Wood (= *Chapuisia* Dugés). Except for the addition of one other species, *minor* Eggers (1936, Ann. Mag. Nat. Hist., Ser. 17, 10:635), from India, this genus has scarcely been mentioned in the literature. It is very primitive and has several characters suggesting a relationship to the Platypodidae, although it clearly belongs in Scolytidae. Except for the fact that it was taken from a liana ("jungle rope") nothing of its habits is known.

An equally peculiar insect belonging to the same generic group with *Craniodicticus* recently was collected in Venezuela. Both genera have the body elongate, the antennal funicle 5-segmented, the scape simple, the club with two, straight, transverse sutures, the pronotum laterally excised as in primitive Platypodidae, the anterior coxae narrowly separated, the prosternum extending well behind the anterior coxae, the mesosternum feebly inflated, the scutellum small, the tibiae short, rather broad, with four socketed teeth, and the basal margins of the elytra unarmed. These genera do not belong to any previously recognized tribe of Scolytidae; therefore, the new tribal name Carphodicticini is proposed to include them.

DIAGNOSIS.—This genus is rather closely allied to *Craniodicticus*, but it is distinguished by the larger, somewhat asymmetrical antennal club,

by the very large, elongate, shallowly emarginate, coarsely faceted eyes, by the very broad oral region, and by entirely different types of characters on the frons and elytral declivity.

DESCRIPTION.—Eyes large, broadly emarginate; antennal scape simple, funicle 5-segmented, club moderately flat, slightly asymmetrical, with two straight, transverse sutures clearly indicated and at least partly septate, a third suture obscurely indicated. Pronotum elongate, laterally excised as in primitive Platypodidae, anterior coxae moderately separated, prosternum extending well behind coxae. Scutellum small, not depressed. Elytral bases unarmed; interstriae 10 obsolete on posterior half. Anterior coxae with raised cusp on anterodistal margin; tibiae short, broad, armed by several teeth on outer margin; tarsi longer than tibiae, segments cylindrical, 1, 2, and 3 about equal in length.

TYPE SPECIES.—*Carphodicticus cristatus* Wood, described below.

#### *Carphodicticus cristatus*, n. sp.

The only known member of the family that could possibly be confused with this species is *Craniodicticus mucronatus* Blandford, but the generic characters cited above distinguish it. The very elongate platypodid body form and armature of the elytral declivity are unique.

MALE.—Length 2.2 mm (paratypes 1.9-2.4 mm), 3.4 times as long as wide; color reddish brown.

Frons broad, very strongly convex, protruding abruptly above elevated, shining epistoma, very closely, deeply, rather finely punctured; glabrous except a few short bristles just above epistoma and a broad, dense epistomal brush of long coarse setae; oral area very broad. Eye elongate, broadly, shallowly emarginate, coarsely faceted; about four times as long as wide; more than half of eye below antennal socket. Antennal scape moderately short; funicle 5-segmented; club as described above.

Pronotum 1.4 times as long as wide; widest at basal and anterior angles, basal and anterior margins very broadly rounded, lateral margins on basal half broadly, deeply excised as in Platypodidae; surface smooth, shining, a few minute points, punctures close, deep, moderately coarse. Glabrous, except a few minute, bifid hairs on basal margin.

Elytra 2.0 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal three-fourths, then abruptly rounded slightly to projecting scoop formed by



declivital costae, broadly, shallowly emarginate behind; bases feebly emarginate at scutellum; scutellum small, oval, attaining elytral surface; striae 1 very feebly impressed, others not impressed, punctures coarse, deep, close; interstriae half as wide as striae, smooth, shining, punctures minute, shallow, irregularly uniseriate. Declivity commencing three-fourths of elytral length from base, steep; striae 1 and 2 rather coarsely punctured; interstriae 1 distinctly elevated, convex, summit smooth, 2 impressed, narrow, obsolete before apex, 3 very strongly, narrowly elevated from just below declivital base to just before apex, crest smooth; punctures on lateral interstriae near declivity rather coarse, not granulate.

Protibiae two-thirds as long as femur, broad, terminal mucro curved toward tarsal insertion, four socketed teeth on lateral margin; tarsi about as long as tibia, segments 1, 2, and 3 cylindrical, about equal in length.

Vestiture confined to declivity outside of concave area, consisting of coarse bristles in interstitial rows.

FEMALE.—Similar to male except frons less strongly protuberant immediately above epistoma.

TYPE LOCALITY.—Eight km west of Bumbum, Barinas, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 110 paratypes were collected at the type locality on 11 February 1970, 150 m elevation, No. 326, by S. L. Wood.

The large, cut host tree was not recognized by local professional foresters; it may have been a rare *Lauraceae*. The tree had been cut several months and had been largely abandoned by a species of *Phloeotribus*. This species entered through *Phloeotribus* entrance tunnels, followed along an old egg gallery to a convenient point where their tunnels commenced along the cambium, engraving both phloem and xylem tissues. The beetles were monogamous and worked in pairs. The egg tunnels branched occasionally, with a different pair of beetles working on each branch, all using the same original entrance hole. Egg niches were formed along the cambium on each side of the gallery where eggs were deposited individually. The larvae constructed short, irregular mines in the phloem next to the cambium. The wood was exceedingly dry and hot, but the infestation was thriving.

The holotype, allotype, and paratypes are in my collection.

*Pseudothysanoes querneus*, n. sp.

This species is rather closely related to *querneus* Wood, but it is distinguished by the more coarsely punctured, rugulose pronotal disc, by the coarser striae punctures, and by the much wider elytral scales.

MALE.—Length 1.3 mm (paratypes 1.2-1.5 mm), 2.5 times as long as wide; color black.

Frons convex, a slight transverse impression just above epistoma; surface obscurely, rather coarsely punctured, rugulose; vestiture of moderately abundant, rather short, coarse setae. Antennal scape short, broad, slightly longer than pedicel; club rather small, widest through segment 2, sutures 1 and 2 slightly procurved, 1 marked by setae only at sides.

Pronotum 0.87 times as long as wide; widest on basal third, sides arcuately converging toward broadly rounded anterior margin; anterior margin armed by six low teeth; summit at middle, moderately high; anterior slope asperate; posterior area coarsely, indistinctly punctured, rugulose. Vestiture of moderately abundant, stout setae.

Elytra 1.6 times as long as wide; sides straight and parallel on basal two-thirds, rather narrowly rounded behind; striae not impressed, punctures moderately coarse, rather deep; interstriae as wide as striae, somewhat irregular, punctures rather fine, uniseriate. Declivity steep, convex; striae irregularly, weakly impressed, interstitial punctures with coarse, low granules; most of surface obscurely subgranulose. Vestiture of semirecumbent striae hair, and rows of equally long, erect interstitial scales; each scale about twice as long as wide.

FEMALE.—Similar to male except antennal scape as wide as long, bearing a tuft of very long white hair; teeth on anterior margin of pronotum smaller, some obsolete; interstitial scales slightly longer and more slender, each about three to four times as long as wide.

TYPE LOCALITY.—Seventeen km (10 miles) east of Pachuca, Hidalgo, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 15 paratypes were taken at the type locality on 10 June 1967, at an elevation near 2500 m, No. 5, in *Quercus*, by S. L. Wood. Ten paratypes were taken 8 km (5 miles) west of Tulancingo, Hidalgo, Mexico, 11 June 1967, 2400 m elevation, No. 10, in *Quercus*, by S. L. Wood. Nine paratypes were collected 15 km (9 miles) east of Huataseco, Veracruz, 7-VII-67, 300 m elevation, No. 173, in *Quercus*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Pseudothysanoes furvescens*, n. sp.

This species is in the *phoradendri* group very closely related to *furvus* Wood. From *furvus* it may be distinguished by the absence of granules on the male discal interstriae and by the shorter elytral scales.

MALE.—Length 1.3 mm (paratypes 1.1-1.4 mm), 2.3 (female 2.8) times as long as wide; color black.

Frons convex, transversely impressed above epistoma; surface finely rugulose, punctures not evident; vestiture of sparse, coarse, short setae. Antennal scape elongate; moderately large, oval, widest at middle, suture 1 straight, 2 obscure.

Pronotum as in *furvus*.

Elytral proportions and outline as in *furvus*; striae not impressed, punctures small, shallow; interstriae slightly wider than striae, smooth, punctures very fine, not at all granulate or elevated. Declivity convex, steep; striae as on disc; interstriae each with a row of fine granules. Vestiture consisting only of rows of interstitial scales, each scale about three times as long as wide, slightly shorter than distance between rows, spaced within a row by about one and one-half times length of a scale.

FEMALE.—Similar to male except more slender, 2.8 times as long as wide; frons less strongly convex; anterior margin of pronotum unarmed; striae punctures much smaller, obscure; occasional striae hair present.

TYPE LOCALITY.—Eighteen km (11 miles) north of Huajuapán, Oaxaca, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 14 paratypes were taken at the type locality on 15 June 1967, No. 42, from *Phoradendron* branches, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Pseudothysanoes funereus*, n. sp.

This species is very closely related to *phoradendri* Blackman, but it is distinguished by the more slender body form, by the more rugulose pronotal disc, by the much smaller striae punctures on both disc and declivity, and by the near absence of interstitial granules.

MALE.—Length 1.4 mm (paratypes 1.3-1.5 mm), 2.4 times as long as wide; body color black.

Head and prothorax as in *phoradendri* except pronotal disc slightly more rugulose.

Elytra 1.5 times as long as wide; sides straight and parallel on basal two-thirds, narrowly rounded behind; striae not impressed, punctures small, shallow, separated by two or more diameters of a puncture; interstriae smooth, at least twice as wide as striae, punctures uniseriate, very small, feebly if at all granulate. Declivity beginning well behind middle, convex; interstitial granules small, regular. Vestiture as in *phoradendri*.

TYPE LOCALITY.—Volcan Colima, Jalisco, Mexico.

TYPE MATERIAL.—The male holotype and six male paratypes were taken at the type locality on 23 June 1965, 2500 m elevation, No. 108, from *Phoradendron longifolium*, by S. L. Wood.

The holotype and paratypes are in my collection.

*Pseudothysanoes graniticus*, n. sp.

This species is allied to *verdicus* Wood and *viscicolens* Wood, but it is distinguished by the shallowly impressed female frons with setae on the vertex short, and by the more coarsely granulate male declivital interstriae with scales on lower half of interstriae 1 smaller.

FEMALE.—Length 1.9 mm (male 1.8 mm), about 2.7 times as long as wide, color very dark brown.

Frons shallowly concave from epistoma to upper level of eyes, flattened to vertex; surface of concave area smooth, shining, impunctate, finely punctured above, somewhat strigose at sides; epistomal brush conspicuous at sides; flattened area above eyes bearing rather abundant, moderately short, coarse hair. Antennal scape elongate, ornamented by abundant, long hair; club about 2.5 times as long as wide; antenna as long as pronotum.

Pronotum 0.96 times as long as wide; widest at base, sides almost straight, converging feebly on basal half, broadly rounded in front; anterior margin unarmed; summit rather high, at middle; anterior area asperate; posterior area rugose-reticulate, with fine, obscure punctures, fine granules behind summit. Vestiture sparse, of fine and coarse, short hair.

Elytra about 1.6 (slightly spread) times as long as wide, 1.8 times as long as pronotum; striae not impressed except 1 weakly, punctures rather small, deep; interstriae slightly less than twice as wide as striae, almost smooth, uniseriately, finely granulate. Declivity convex,

steep; interstitial granules slightly larger, confused on 2 and 3. Vestiture of very fine strial hair and rows of erect interstitial scales; each scale on disc three to four times as long as wide, four to five times as long as wide on declivity, each scale slightly longer than distance between scales within a row or between rows.

MALE.—Similar to female except stouter, about 2.5 times as long as wide (estimated); frons not visible; pronotum distinctly constricted on anterior half, anterior margin armed by ten teeth; strial punctures coarser, interstriae one and one-half times as wide as striae, much more coarsely granulate; elytral scales slightly longer, proportions as on female; scales on lower half of interstriae 1 conspicuously smaller; granules on declivital interstriae 2 and 3 uniseriate.

TYPE LOCALITY.—Forty-three km (26 miles) southeast of Nochixtlan, Oaxaca, Mexico.

TYPE MATERIAL.—The female holotype and male allotype were collected at the type locality on 17 June 1967, No. 55, from *Phoradendron*, by S. L. Wood.

The holotype and allotype are in my collection.

*Pseudothysanocs verticillus*, n. sp.

This species is very closely allied to *viscicolens* Wood, but it may be distinguished by the more shallowly concave female frons, with a more dense tuft of hair on the vertex, and by the much shorter elytral scales.

FEMALE.—Length 1.6 mm, 2.8 times as long wide; color almost black, pronotal summit reddish brown.

Frons as in *viscicolens* except less deeply concave, tuft of hair on vertex slightly shorter, more dense. Antenna and pronotum as in *viscicolens*.

Elytra 1.7 times as long as wide, 1.8 times as long as pronotum; striae not impressed, punctures rather small, moderately deep; interstriae about twice as wide as striae, punctures uniseriate, finely granulate. Declivity as in *graniticus* Wood, with indistinct granules and punctures on interstriae 2 and 3 confused. Vestiture of fine, short strial hair, and rows of erect, short, interstitial scales; each scale one to one and one-half times as long as wide, half as long as distance between rows, equal in length to distance between scales in a row.

TYPE LOCALITY.—Twenty-seven km (16 miles) north of Ixmiquilpan, Hidalgo, Mexico.

TYPE MATERIAL.—The unique female holotype was taken at the type locality on 10 July 1967, 1900 m elevation, probably from *Phoradendron*, by S. L. Wood.

The holotype is in my collection.

*Pseudothysanocs cuspidis*, n. sp.

This species is allied to *subulatus* Wood and *spicatus* Wood, but it may be distinguished by the smaller size, by the flattened and grooved female frons, by the coarser punctures on the elytral declivity, and by the slender, rather long elytral setae.

FEMALE.—Length 1.3 mm (paratypes 1.2-1.4 mm), 2.7 times as long as wide; color very dark brown.

Frons transversely flattened, longitudinally concave from epistoma to upper level of eyes, median line narrowly sulcate from level of antennal insertion to upper level of eyes; surface smooth and shining on epistomal area, then finely substrigose becoming more coarsely reticulate-granulate above eyes; vestiture sparse, fine, inconspicuous. Antennal scape elongate; club moderately large, sutures very obscure.

Pronotum 1.0 times as long as wide; sides feebly arcuate, subparallel on basal half, distinctly constricted on anterior half, broadly rounded in front; summit at middle, moderately high; sparsely asperate on anterior slope; finely rugose-reticulate behind, a few minute granules. Vestiture of sparse hair.

Elytra 1.8 times as long as wide, 1.8 times as long as pronotum; sides almost straight and parallel on more than basal two-thirds, rather narrowly rounded behind; striae not impressed, punctures small, shallow; interstriae not smooth, less than twice as wide as striae, punctures fine, obscured by surface sculpture. Declivity convex, steep; interstriae uniseriately, finely granulate. Vestiture of rows of very fine strial hair and rows of slightly longer, coarser, interstitial setae, not at all scalelike; interstitial setae about as long as distance between rows.

Last visible sternum narrowly produced to form a mucronate process.

TYPE LOCALITY.—Ten km (6 miles) northeast of Teziutlan, Puebla, Mexico.

TYPE MATERIAL.—The female holotype and 13 female paratypes were taken at the type locality on 2 July 1967, 1600 m elevation, No. 144, by S. L. Wood.

The holotype and paratypes are in my collection.



*Pseudothysanoes tenellus*, n. sp.

Presumably this species is allied to *hopkinsi* Blackman, but it is distinguished by the very elongate interstitial scales on the male declivity, by the flattened frons in both sexes with a feeble central impression.

MALE.—Length 1.6 mm (paratypes 1.3-1.6 mm), 2.4 times as long as wide; color almost black.

Frons almost flat from transverse impression just above epistoma to upper level of eyes, convex above, a small median impression at upper level of eyes; smooth and shining near median line, becoming rugose-reticulate in lateral areas, rugose-punctate above eyes; vestiture of sparse, coarse setae. Scape elongate, slender; club longer than scape, broadly oval, two sutures clearly marked, rather strongly procurved.

Pronotum 1.0 times as long as wide; widest at base, sides strongly arcuate, very strongly constricted on anterior half, rather narrowly rounded in front; anterior margin armed by six coarse teeth; summit behind middle; asperate on anterior slope; reticulate-granulate in posterior area, with sparse, fine, obscure punctures, a few granules behind summit. Vestiture of sparse, short, stout setae.

Elytra 1.4 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, obtusely angulate behind; striae not impressed, punctures moderately large, deep; interstriae slightly wider than striae, almost smooth, uniseriately, coarsely granulate on posterior third, punctures feebly to not at all granulate to base. Declivity broadly convex, rather steep; striae weakly impressed on upper two-thirds, punctures smaller; uniseriate interstitial granules rather coarse at base, decreasing in size on upper two-thirds, almost obsolete below. Vestiture consisting of rows of interstitial scales, short on disc, each about three times as long as wide, increasing in length toward declivity, very long and delicate on declivity, some about four times as long as distance between rows.

FEMALE.—Similar to male except frons more extensively flattened, more finely sculptured; pronotum similarly, almost equally armed; interstitial granules slightly smaller; declivital scales little longer than those on disc, each about three times as long as wide, those on interstriae 1 and 2 smaller.

TYPE LOCALITY.—Thirty-three km (21 miles) west of Morelia, Michoacan, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 17 paratypes were taken at the type locality on 16 June 1965, at 2300 m elevation, No. 64 from *Phoradendron* twigs, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Pseudothysanoes yuccavorus*, n. sp.

This species is allied to *hopkinsi* Blackman, but it may be distinguished by the flattened frons with the absence of a central fovea, by the smaller, more slender antennal club, and by the shorter, stouter interstitial scales.

MALE.—Length 1.2 mm (paratypes 1.1-1.3 mm), 2.2 (female 2.5) times as long as wide; color black.

Frons weakly convex, almost flat to upper level of eyes, a weak transverse impression just above epistoma; epistoma shining, remaining area rather coarsely reticulate-granulate, punctures fine, obscure; vestiture of sparse, short, coarse setae. Antennal scape elongate, slender; club small, 1.6 (female 1.8) times as long as wide, sutures very obscure, weakly procurved.

Pronotum 0.92 times as long as wide; subtriangular, widest at base, sides weakly arcuate, converging toward narrowly rounded anterior margin; anterior margin armed by four coarse teeth; summit high, narrow; anterior area coarsely asperate; posterior area rugulose, a few fine granules behind summit; vestiture of sparse, coarse setae of moderate length.

Elytra 1.3 times as long as wide, 1.6 times as long as pronotum; sides almost straight and parallel on slightly more than basal two-thirds, rather broadly rounded behind; striae not impressed, punctures small, moderately deep; interstriae twice as wide as striae, almost smooth, uniseriately, rather coarsely granulate. Declivity rather steep, convex; as on disc. Vestiture consisting of minute, fine strial hair, and erect, interstitial scales; each scale three times as long as wide, separated between rows and within a row by distances slightly greater than length of a scale.

FEMALE.—Similar to male except body form more slender; antennal club longer; anterior margin of pronotum more broadly rounded, unarmed; interstitial granules almost obsolete on disc; interstitial scales slightly longer, very slender, each scale eight or more times as long as wide.

TYPE LOCALITY.—Fifteen km (9 miles) west of Durango, Durango, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 45 paratypes were collected at the type locality on 4 June 1965, at 1300 m elevation, No. 1, from dying *Yucca* leaves on a large, healthy plant, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Thysanocis inornatus*, n. sp.

This species is distinguished from the closely allied *mexicanus* Wood by the greatly reduced size of stria punctures on the declivity, by the shorter, more widely spaced interstitial scales, by the finer interstitial granules on the declivity, and by the almost glabrous female frons.

FEMALE.—Length 1.6 mm (paratypes 1.4-1.7 mm), 2.7 times as long as wide; color very dark brown.

Frons moderately, rather broadly concave from epistoma to upper level of eyes; surface above concavity reticulate-granulate, becoming reticulate on upper part of concavity, smooth and shining over lower areas; a fovea at center; almost glabrous except near lateral margins of epistoma. Antennal scape bearing numerous long setae.

Pronotum 1.04 times as long as wide; widest one-third length from base, sides arcuate, not converging on basal half, rather strongly constricted in front of middle, moderately rounded in front; anterior margin armed with six teeth; summit at middle; posterior area reticulate to obscurely reticulate-granulate, a few minute, obscure punctures. Vestiture sparse, consisting of a few short, stout setae.

Elytra 1.6 times as long as wide; sides almost straight and parallel on basal three-fourths, rather narrowly rounded behind; striae not impressed, punctures small, shallow; interstriae almost smooth, with obscure lines, almost three times as wide as striae, puncture sparse, uniseriate, very finely granulate. Declivity steep, convex; stria punctures reduced, minute to obsolete; interstitial granules regularly spaced, fine. Vestiture of rows of very minute, fine, stria hair, and rows of erect interstitial scales; each scale three to four times as long as wide, spaced within a row by one and one-half to three times length of a scale, between rows by about one and one-half times length of a scale.

MALE.—Similar to female except stouter, 2.3 times as long as wide; frontal impression smaller, about two-thirds as large, reticulation extending almost to epistomal area; scape sparsely pubescent; teeth on anterior margin of pronotum larg-

er; interstitial scales wider, each two to three times as long as wide.

TYPE LOCALITY.—Volcan Colima, Jalisco, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and five paratypes were taken at the type locality on 23 June 1965, 2500 m elevation, No. 103, from an unidentified shrub, by S. L. Wood. Eight paratypes bear identical data except they were No. 106, taken from small branches of a *Rhus* near *aromatica*. Ten paratypes were collected at Aguascalientes, Aguascalientes, Mexico, 12 June 1965, 2100 m elevation, No. 43, from *Mimosa* branches, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Micracisella adnata*, n. sp.

This species is distinguished from the allied *knulli* Blackman by the presence of six teeth on the anterior margin of the pronotum, by the finely tuberculate, almost unelevated declivital interstriae 3, by the wider interstitial scales, and by the median impression on the female frons.

FEMALE.—Length 1.9 mm (paratypes 1.9-2.0 mm), 2.8 times as long as wide; color very dark reddish brown.

Frons convex, with a narrow, subtriangular, median impression from near upper level of eyes to level of antennal insertion; surface reticulate-granulate, apparently with a few larger granules; vestiture of moderately abundant, coarse, moderately short setae. Eye slightly more than twice as long as wide; antenna as in *knulli*.

Pronotum 1.1 times as long as wide; as in *knulli* except anterior margin armed with six teeth, and posterior area rugulose-reticulate, punctures fine, shallow, obscurely subtuberculate. Vestiture abraded.

Elytra 1.8 times as long as wide, 1.6 times as long as pronotum; outline as in *knulli*; striae not impressed, punctures fine, shallow; interstriae twice as wide as striae, subrugulose marked by irregular lines, punctures uniseriate, very fine, shallow, obscure. Declivity steep, convex, apex protruding and minutely divaricate, muero absent; surface on lower two-thirds rugulose-reticulate; striae obscure but visible; interstriae 1 obscurely, very minutely, uniseriately granulate, 2 with a few granules on upper fourth, 3 with larger granules to junction with 9, 7 and 9 with granules similar to 3. Vestiture abraded on disc; on declivity consisting of rows of minute stria hair and rows of suberect, interstitial

scales; each scale with a slight arch or curl toward posterior direction, two to four times as long as wide, each almost as long as distance between rows, slightly closer within a row, scales absent on lower half of interstriae 2.

MALE.—Similar to female except (head concealed) stria punctures slightly deeper; declivital interstriae 1 and 3 feebly elevated, 9 distinctly elevated; interstitial scales averaging slightly more slender.

TYPE LOCALITY.—Fourteen km (9 miles) east of Huatusco, Veraacruz, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and one damaged female paratype were taken at the type locality on 7 July 1967, 270 m elevation, No. 173, from *Quercus* twigs, by S. L. Wood.

The holotype, allotype, and paratype are in my collection.

*Micracisella serjaniae*, n. sp.

This species is allied to *striata* Wood, but it may be distinguished by the much smaller stria punctures, by the less nearly granulate discal interstriae, by the distinctly, uniseriately granulate declivital interstriae, by the absence of a preapical emargination on the costal margin of the elytra and by a distinct sutural emargination at the elytral apex.

FEMALE.—Length 1.3 mm (paratypes 1.2-1.3 mm), 3.0 times as long as wide; color very dark reddish brown, pronotum lighter.

Frons, antenna, and pronotum as in *striata*, except segment 1 of antennal club distinctly shorter.

Elytra 1.8 times as long as wide, 1.7 times as long as pronotum; outline as in *striata* except apex wider and suturally emarginate; striae not impressed, punctures moderately small; interstriae shining, somewhat irregular, one and one-half times as wide as striae, punctures fine, uniseriate, not at all granulate. Declivity steep, convex, produced apically; stria punctures deeper than on disc; interstitial punctures granulate. Vestiture as in *striata* except interstitial scales very slightly larger; each scale about two to three times as long as wide.

MALE.—Similar to female except tuft of hair on scape much smaller; discal interstriae evidently less irregular.

TYPE LOCALITY.—Zamorano, Morazan, Honduras.

TYPE MATERIAL.—The female holotype, male allotype, and 83 paratypes were taken at the

type locality on 18 April 1964, at 700 m elevation, No. 547, from *Serjania racemosa*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Micracis amplinis*, n. sp.

This is the largest known species in the genus; it is also distinguished from all other representatives of the genus by the moderately impressed discal striae and by the very broad interstitial scales on the declivity.

MALE.—Length 3.2 mm (paratype 3.3 mm), 3.0 times as long as wide; color reddish brown.

Frons convex, with a moderate, transverse impression just above epistoma; surface finely reticulate-granulate, with rather numerous large, low, rounded granules widely distributed on convex area; epistomal area smooth, shining; glabrous except for a few setae lateral to epistoma. Antennal scape only slightly flattened; suture 1 reaching middle of club.

Pronotum 1.03 times as long as wide; widest on basal third, sides weakly arcuate, slightly constricted on anterior third, rather broadly rounded in front; anterior margin armed by ten coarse serrations; summit in front of middle; anterior area coarsely serrate; posterior area reticulate-subgranulate, dull, a few, small, shining granules to base. A few stout setae in lateral areas.

Elytra 1.8 times as long as wide, 1.8 times as long as pronotum; sides almost straight and parallel on basal three-fourths, strongly, acutely acuminate and mucronate behind; striae impressed except on basal fourth, punctures moderately small, deep; interstriae shining, almost smooth, three times as wide as striae, punctures very minute, almost obsolete, each with two or three large granules at base of declivity. Declivity rather steep, convex, apex produced; entire surface minutely granulose; stria punctures small, deep; interstriae 1 and 3 weakly elevated, punctures on all interstriae as large as those of striae, confused, deep. Vestiture confined to declivity (possibly abraded on disc), of large interstitial scales; each scale about as wide as long, a few as wide as an interstriae.

TYPE LOCALITY.—Five km (3 miles) west of El Salto, Durango, Mexico.

TYPE MATERIAL.—The male holotype and one damaged male paratype were taken at the type locality on 7 June 1965, 2500 m elevation, No. 41, from a *Quercus* branch, by S. L. Wood.



The holotype and paratype are in my collection.

*Micracis incertus*, n. sp.

This species is allied to *lepidus* Wood, but it is distinguished by the presence of a few shallow punctures on the pronotal disc, by the larger interstitial tubercles on the declivity, and by the distribution.

FEMALE.—Length 2.4 mm (paratypes 2.0-2.4 mm), 3.0 (male 2.8) times as long as wide; color very dark brown.

Frons convex, a moderate, transverse impression just above epistoma; surface finely reticulate-granulate, dull, upper half with rather abundant, shallow punctures of moderate size; a few stout setae in lateral and epistomal areas. Antennal scape moderately triangular, ornamented by rather abundant, long hair; suture 1 not quite reaching middle of club.

Pronotum 1.1 times as long as wide; as in *amplinus* except moderately large, shallow, rather abundant punctures intermixed with shining granules on disc. Vestiture of sparse scales and minute hair.

Elytra 1.8 times as long as wide, 1.7 times as long as pronotum; outline as in *amplinus*; striae not impressed, punctures moderately large; interstriae shining, subrugose, twice as wide as striae, punctures moderately large, uniscriate, their anterior margins finely granulate. Declivity steep, convex, apex produced; surface dull; striae punctures small, deep, reduced toward apex; interstitial punctures on 1 and 2 fine, irregular and reduced on lower half, on 3 and lateral areas moderately large, rounded. Vestiture of rows of interstitial scales, largely abraded on disc, each scale about five times as long as wide, as long as distance between rows.

MALE.—Similar to female except frons more strongly convex, punctures replaced by granules; discal interstitial granules smaller except larger near declivity, declivital granules larger, extending to apices of 1 and 2; interstitial scales on upper fourth of declivity longer, some six or eight times as long as wide.

TYPE LOCALITY.—Thirty-seven km (22 miles) west of Durango, Durango, Mexico.

TYPE MATERIAL.—The female holotype was taken at the type locality on 4 June 1965, at 2000 m elevation, No. 4, from *Quercus* branches, by S. L. Wood. The male allotype and 5 paratypes (in poor condition) were taken 64 km

(40 miles) west of Durango on the same day, from the same host and collector, No. 18, at 2500 m elevation. One paratype was taken 5 km (3 miles) west of El Salto, Durango, 7 June 1965, 2500 m elevation, No. 41, from *Quercus* by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Micracis torus*, n. sp.

This species is distinguished from the allied *evanescens* Wood by the smaller size, by the stout, hairlike elytral setae, and by the absence of a sharply defined lower margin of the female frontal elevation.

FEMALE.—Length 2.1 mm (paratypes 1.8-2.2 mm), 3.1 (male 2.7) times as long as wide; color dark reddish brown.

Frons planoconvex to vertex, median half on lower half elevated and brightly shining, its margins rounded not sharply defined, remaining area minutely reticulate-granulate; vestiture fine, short, uniformly distributed on upper area, slightly longer toward vertex. Antenna about as in *evanescens* except hair on scape slightly shorter.

Pronotum 1.2 times as long as wide; as in *evanescens* except reticulation in posterior areas finer.

Elytra 1.8 times as long as wide, 1.4 times as long as pronotum; outline as in *evanescens*; striae not impressed, punctures small, shallow; interstriae about three times as wide as striae, almost smooth, punctures very fine, uniscriate. Declivity steep, convex, apex produced; striae punctures reduced, obscure; interstitial punctures small, indistinct. Vestiture of rows of fine, short, striae hair, and rows of longer, coarse, pointed, interstitial hair; slightly longer on declivity, longest interstitial setae equal in length to distance between rows, all setae somewhat confused on declivity.

MALE.—Similar to female except body stouter; frons convex, a transverse impression on lower third, elevation absent, surface with several rounded granules.

TYPE LOCALITY.—Volcan Colima, Jalisco, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and 17 paratypes were taken at the type locality on 23 June 1965, 2500 m elevation, No. 102, from branches of a leguminose tree, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Micracis exilis*, n. sp.

This species is more closely allied to *costaricensis* Wood than to others in the genus, but it is distinguished by the much smaller size, by the more abundant, longer vestiture on the female vertex, by the smaller, smooth, shining area on the female frons, and by the much finer sculpture on the pronotum and elytra.

FEMALE.—Length 1.9 mm (paratypes: females 1.7-1.9 mm; males 1.3-1.7 mm), 3.3 (male 2.7) times as long as wide; color moderately dark yellowish brown, vestiture pale.

Frons rather shallowly concave to upper level of eyes, an acute median carina on upper half; frons smooth and shining on median half below level of antennal insertion, obscurely reticulate and minutely punctured over remaining area; vestiture of short, coarse, subplumose setae over central reticulate area becoming much longer on upper lateral margins and very long on vertex, tips of longest setae on vertex could reach below middle of frons. Antennal scape rather broadly triangular, ornamented by long setae; club moderately large, 1.3 times as long as wide; suture 1 not reaching middle of club.

Pronotum 1.3 times as long as wide; sides straight and parallel on basal two-thirds, rather broadly rounded in front; anterior margin unarmed; summit well in front of middle, asperities fine; posterior area reticulate, punctures sparse, fine, obscurely, minutely granulate. Vestiture of a few coarse setae.

Elytra 1.9 times as long as wide, 1.45 times as long as pronotum; sides straight and parallel on basal three-fourths, rather abruptly rounded then narrowly acuminate at apex; striae not impressed, punctures small, shallow, rather obscure; interstriae slightly more than twice as wide as striae, minutely irregular, punctures small, obscure. Declivity very steep, convex, acuminately produced at apex; surface toward apex very minutely subrugulose; interstriae each with a row of fine granules. Vestiture of short striae hair, and rows of moderately long, coarse, interstitial hair.

MALE.—Similar to female except slightly smaller, stouter; frons convex above, a moderate transverse impression on lower third, surface rugose-reticulate, vestiture sparse, short, inconspicuous; scape small, sparsely pubescent; anterior margin armed by six small teeth; declivital

setae sometimes abraded and appear as short scales.

TYPE LOCALITY.—Nine km south of Barrancas, Barinas, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 11 paratypes were taken at the type locality on 2 December 1969, 150 m elevation, No. 163 from *Espinito de Sabana* (type), No. 155 from *Acalypha* sp., No. 186 from a tree twig, by S. L. Wood. The gallery systems were typical of the genus.

The holotype, allotype, and paratypes are in my collection.

*Micracis vitulus*, n. sp.

This species is allied to *lignicolus* Wood, but it is distinguished by the large size, by the smaller, less pubescent female scape, by the larger antennal club, by the larger, much deeper striae punctures, by the hairlike elytral vestiture, and by the very different elytral declivity in both sexes. This species superficially resembles some species of *Hylocurus*.

FEMALE.—Length 3.6 mm (paratypes 3.2-3.6 mm), 3.6 times as long as wide; color very dark reddish brown, parts of pronotum often lighter.

Frons as in *lignicolus*. Antennal scape broadly club-shaped, at least twice as long as wide, moderately ornamented by rather long hair; club 1.5 times as long as wide, suture 1 extending beyond middle.

Pronotum 1.2 times as long as wide; outline about as in *lignicolus*; anterior margin unarmed; posterior area strongly reticulate, with rather small, isolated, low, rounded granules. Sparse vestiture limited to margins.

Elytra 2.2 times as long as wide, 1.9 times as long as pronotum; sides straight and parallel on basal three-fourths, strongly produced and narrowly mucronate behind; striae weakly to moderately impressed toward declivity, punctures rather large, deep; interstriae smooth, shining, convex near declivity, as wide as striae, punctures small, uniseriate, granulate at margin of declivity. Declivity moderately abrupt, broadly convex, moderately steep, resembling some male *Hylocurus*; striae more strongly impressed; interstriae all irregularly sculptured, a few granules at base, 1 moderately elevated, granules rather coarse, continuing almost to apex, 2 somewhat convex, moderately impressed, devoid of granules, 3 slightly elevated, rather finely, irregularly subserrate, 4-8 with several granules below base, 9 moderately elevated, joining cos-

tal margin. Vestiture confined to declivity, of coarse, moderately abundant, rather long hair in interstitial rows. Basal half of front tibia slightly narrower than in *lignicolus*; posterior face devoid of tubercles.

MALE.—Similar to female except frons as in male *lignicolus*; anterior margin of pronotum with about four indefinite, small serrations; a circumdeclivital ring of rather well-developed, blunt tubercles (largest in this genus); declivity more nearly flat, interstriae 1 higher, 2 lower, tubercles reduced except for a few toward base, 9 more acutely elevated.

TYPE LOCALITY.—Carbonera Experimental Forest, about 50 km (airline) northwest of Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 13 paratypes were taken on 10 November 1969, 2500 m elevation, No. 128, from an unidentified tree seedling, by S. L. Wood. The galleries were typical of the genus.

The holotype, allotype, and paratypes are in my collection.

*Micracis sentus*, n. sp.

Except for the antenna and protibia this species would be placed in the genus *Hylocurus* because of the coarse clytral sculpture. It is remotely allied to *lignicolus* Wood, but it is distinguished by the coarse spines on the male interstriae 1 and 3 and at the base of the declivity on 1-9.

MALE.—Length 2.2 mm, 2.7 times as long as wide; color rather dark reddish brown.

Frons convex, a narrow, transverse impression just above epistoma; surface rather coarsely granulate-punctate, a rather large median tubercle just above level of antennal insertion; vestiture of rather coarse, short bristles over entire surface. Antennal scape moderately long, rather slender; club moderately large, ovate, 1.4 times as long as wide, sutures narrowly, strongly procurved, 1 reaching middle.

Pronotum about as long as wide; sides weakly arcuate and subparallel on basal half, broadly rounded in front; anterior margin armed by 10 coarse teeth; summit slightly in front of middle; posterior area deeply reticulate, with moderately coarse, isolated granules behind summit to base. Vestiture of rather sparse, short scales.

Elytra 1.6 times as long as wide, 1.6 times as long as elytra; sides straight and parallel on basal three-fourths, subacutely angulate behind; striae not impressed, punctures rather small,

deep; interstriae shining, almost smooth, almost twice as wide as striae, punctures moderately coarse, uniseriate, widely spaced, replaced at declivital base by rather large, rounded granules. Declivity steep, convex, produced at apex; surface dull, densely rugulose-reticulate; striae almost obsolete; even-numbered interstriae each with two rounded nodules at base of declivity, tubercles on odd-numbered interstriae slightly larger, becoming pointed and rather widely spaced on declivity, those on 1, 3, and 9 extending below middle, only one or two supplemental tubercles at base of 5 and 7; interstriae 2 weakly impressed; costal margin ascending rather strongly at apex. Vestiture of erect, interstitial scales mostly at base of declivity and at tubercles on declivity, sparse on disc; each scale on disc two to four times as long as wide, longer and more slender on declivity.

TYPE LOCALITY.—El Laurel Experimental Farm, 12 km southwest of Caracas, Venezuela.

TYPE MATERIAL.—The male holotype was taken at the type locality on 1 May 1970, 1300 m elevation, No. 460, from a branch of an unidentified tree, by S. L. Wood.

The holotype is in my collection.

*Hylocurus torosus*, n. sp.

This species is very closely related to *rudis* LeConte but it is distinguished by characters of the frontal excavation and its protuberances as noted below.

FEMALE.—Length 2.0 mm, 2.7 times as long as wide; color very dark brown.

Frons deeply excavated on median two-thirds from just above epistomal margin to well above eyes, broadly oval in outline, its margins abrupt on all sides; surface etched as in *rudis*; lateral walls of concavity with a pair of large, protruding, subcircular areas, almost as high as wide, pile longer than in *rudis*.

Antenna, pronotum, and elytra as in *rudis*.

TYPE LOCALITY.—Florence, South Carolina.

TYPE MATERIAL.—The female holotype was taken at the type locality on 12 May 1961, in flight, by V. M. Kirk.

The holotype is in my collection.

*Hylocurus verrucosus*, n. sp.

This species is allied to *nodulus* Wood, but it is distinguished by the smaller size, by the dull, reticulate elytral declivity with the declivital striae punctures largely obsolete, and by



the distinctly elevated declivital interstriae 9 with a large tubercle at the apex of the elevation.

MALE.—Length 1.5 mm (paratypes 1.4-1.8 mm), 2.5 times as long as wide; color black.

Frons convex, a transverse carina on median half just below upper level of eyes; surface reticulate-granulate, a few fine, obscure punctures below, sparse, low, elongate, shining granules above; vestiture inconspicuous. Antennal club as in *nodulus* except middle third of suture 1 totally obsolete.

Pronotum as in *nodulus* except teeth on anterior margin much smaller; posterior area more finely sculptured, with fewer granules. Half of setae on disc scalelike.

Elytra 1.5 times as long as wide; outline as in *nodulus* except for a large tubercle on interstriae 9; disc as in *nodulus* except interstitial nodules slightly narrower, perhaps slightly higher. Declivity slightly steeper than in *nodulus*; surface finely reticulate-granulate; striae punctures obsolete except at base; interstriae 2, 4, 6, and 8 with tubercles only at base, on 1, 3, 5, and 7 tubercles extend about one-third declivital length from base, 3 weakly elevated and with a moderately large tooth at middle, 9 slightly more strongly elevated, its elevation ending at middle of declivity in a coarse, pointed tooth. Vestiture of minute, fine, striae hair, and interstitial rows of scales; scales on basal half of disc short, becoming much longer toward and on upper half of declivity, scales much wider than in *nodulus*.

FEMALE.—Similar to male except frontal carina shorter; interstitial nodules poorly developed; interstitial scales more slender.

TYPE LOCALITY.—Nine km south of Barrancas, Barinas, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 33 paratypes were taken at the type locality on 5 November 1969, 150 m elevation, No. 111, from cut *Inga* branches, by S. L. Wood. The galleries were typical of the genus.

The holotype, allotype, and paratypes are in my collection.

*Hylocurus dilutus*, n. sp.

This species is allied to *simplex* Blandford and *ruber* Wood, but it is distinguished by the smaller average size, by the smaller interstitial tubercles in both sexes, and by the small, confused, striae punctures on the declivity.

MALE.—Length 2.1 mm (paratypes 2.1-2.5

mm), 2.6 times as long as wide; color rather dark reddish brown.

Frons convex, transversely impressed on lower third; surface obscurely reticulate-granulate, convex area with rather numerous, very large, low, shining granules over more than central half; vestiture fine, sparse, inconspicuous except more abundant along epistoma. Antennal club broadly oval; sutures 1 and 2 strongly procurved, 1 almost reaching middle.

Pronotum 1.1 times as long as wide; as in *simplex* except sides weakly arcuate, anterior margin armed by eight coarse serrations, posterior area more strongly reticulate with isolated granules slightly smaller.

Elytra 1.5 times as long as wide, 1.4 times as long as pronotum; outline as in *simplex*; striae not impressed, punctures moderately large, rather deeply, not sharply impressed; interstriae almost smooth, with a few obscure, transverse lines, evidently narrower than striae, punctures not clearly defined; each interstriae near declivity with about two low, poorly formed granules. Declivity steep, convex, produced at apex; striae punctures small, deep, confused on lower two-thirds; interstriae 1 and 3 weakly elevated, 1 with very small granules on upper two-thirds, 3 with small granules on upper third, 9 rather strongly elevated on basal half, its summit subserrate, a rather broad impression between 9 and costal margin. Subglabrous; very sparse, short, fine hair on some specimens.

FEMALE.—Similar to male except frons flattened on at least median half, transverse impression absent, surface reticulate, dull, with rather abundant, small, deep punctures and fine, short, abundant hair; serrations on anterior margin of pronotum smaller, irregular; striae punctures on disc smaller, not as deep, sharply defined; tubercles on declivity evidently slightly smaller.

TYPE LOCALITY.—Volcan, Colima, Jalisco, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 12 paratypes were collected at the type locality on 23 June 1965, at 2500 m elevation, No. 102, by S. L. Wood, from a branch of a leguminose tree.

The holotype, allotype, and paratypes are in my collection.

*Hylocurus disparilis*, n. sp.

This species is allied to *inaequalis* Wood, but it is distinguished by the exaggerated development of the male circumdeclivital spines.

MALE.—Length 2.2 mm, 2.5 times as long as wide; color very dark brown.

Frons, antenna, and pronotum as in *inaequalis* Wood except circumdeclivital spines longer, particularly on alternate odd-numbered interstriae, spines 1 and 9 conspicuously longer than others; elytral apex much more slender than in allied species. Declivital face with punctures on lower two-thirds of striae 1 and 2 very small, in rows, all other punctures coarse, deep, confused, becoming much larger toward base; interstriae 3 not elevated, armed by two blunt tubercles.

TYPE LOCALITY.—Zamorano, Morazan, Honduras.

TYPE MATERIAL.—The unique male holotype was taken at the type locality on 18 April 1964, 700 m elevation, No. 558, from a branch of *Ficus glabrata*, by S. L. Wood.

The holotype is in my collection.

*Hylocurus dissidens*, n. sp.

This species is rather closely allied to *aberrans* Wood, but it is distinguished by the slightly smaller spines in the male circumdeclivital ring, by the more strongly convex male declivital face, by the more abundant pubescence on the female frons, and by the more strongly procurved suture 1 on the antennal club.

MALE.—Length 1.9 mm (paratypes 1.9-2.2 mm), 2.7 times as long as wide; color dark reddish brown.

Frons as in *aberrans*. Antennal club with sutures moderately procurved. Pronotum as in *aberrans* except granules on discal area slightly larger, punctures not indicated.

Elytra 1.6 times as long as wide; widest at base of declivity, sides straight on more than basal three-fourths, abruptly, serrately rounded, then obtusely produced at apex; striae not impressed except near declivital margin, punctures moderately coarse, deep; interstriae almost as wide as striae, smooth, punctures small, sparse; each interstriae ending at margin of declivity in a coarse nodule of equal length, 3-9 acutely pointed on their lateral margins and projecting slightly. Declivity abrupt, very steep, broadly convex, produced behind; strial punctures in rows, those near base of declivity larger; interstriae minutely granulate, 1 slightly elevated to apex and bearing about five small granules on middle third, 3 rather weakly elevated on upper two-thirds, with four closely set, acutely pointed teeth on middle third;

interstriae 9 acutely elevated, joining costal margin, but with a very small notch at its apex as it joins costal margin. Glabrous except for a few minute, hairlike setae at declivital margin.

FEMALE.—Similar to male except frons shallowly concave on central half, upper two-thirds of concavity with dense, erect, coarse, subplumose setae, surface minutely reticulate-granulate, devoid of larger granules; anterior margin of pronotum more finely serrate; strial punctures slightly smaller; circumdeclivital ring of nodules absent, declivity more strongly convex; declivital face similar, more finely sculptured, all interstriae with a few minute granules near base, 9 rather weakly elevated, ending remotely from costal margin; vestiture rather widely distributed, sparse, coarse, moderately long.

TYPE LOCALITY.—Laguna Santa Maria, Nayarit, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 19 paratypes were taken at the type locality on 6 June 1965, 1000 m elevation, No. 197, from a large, square-stemmed vine, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Hylocurus villifrons*, n. sp.

This species is remotely allied to *dissidens* Wood, but it is distinguished by the very different female frons, by the very different sculpture of the male declivity, and by other characters described below.

FEMALE.—Length 2.6 mm (paratypes 2.0-2.6 mm), 3.2 (male 2.9) times as long as wide; color very dark reddish brown.

Frons flattened from epistoma to vertex, area above eyes larger and wider than area below; surface entirely concealed by vestiture; vestiture below level of eyes of abundant, coarse, erect, moderately long, subplumose setae, increasing in length and apparently in thickness to upper margin, those on upper margin appearing as coarse, broad, ribbonlike setae each subdivided near its apex into about six hairlike filaments, tips of these large setae extend more than half distance to epistomal margin. Antennal scape short, twice as long as pedicel, not expanded, ornamented by a small tuft of hair; club subcircular; sutures broadly procurved, 1 reaching middle of club.

Pronotum 1.3 times as long as wide; sides almost straight and parallel on basal half, rather broadly rounded in front; anterior margin un-

armed; summit well in front of middle; posterior area shining, finely subrugose-reticulate, with fine, isolated granules behind summit almost to base. Vestiture confined to margins.

Elytra 1.9 times as long as wide; sides straight and parallel on basal three-fourths, acutely angulate behind; striae not impressed, punctures moderately coarse, rather deep; interstriae slightly wider than striae, almost smooth, shining, punctures almost entirely obsolete except replaced near declivity by uniseriate, moderately coarse granules. Declivity steep, convex, produced at apex; striae distinctly impressed, punctures not as deep as on disc; interstriae distinctly convex except near apex, each with a row of low, rounded tubercles on upper half, extending well below middle on 3 and 7, 9 moderately elevated and continuing without interruption to costal margin. Vestiture confined to declivity, consisting of short, stout and long, slender scales of moderate abundance.

MALE.—Similar to female except averaging shorter and stouter; frons convex and very coarsely deeply punctured on upper half, flattened and very finely sculptured below, vestiture limited to lower area, fine, inconspicuous; anterior margin of pronotum irregularly armed by about six small teeth; interstriae rather strongly convex at base of declivity, granules larger at base, largely obsolete on declivital face; interstriae 9 more strongly, acutely elevated; declivital vestiture evidently more abundant, scales distinctly wider.

TYPE LOCALITY.—Rancho Grande, Pittier National Park, Aragua, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 21 paratypes were taken at the type locality on 9 April 1970, 1100 m elevation, No. 432, from a species of Guttiferae by S. L. Wood. Five paratypes bear identical data except No. 409, from a Meleaceae; 37 paratypes are from El Laurel, 12 km southwest of Caracas, Venezuela, 1 May 1970, 1800 m elevation, No. 511, from tree branches by S. L. Wood; 13 paratypes are from Colonia Tovar, Aragua, Venezuela, 4 May 1970, 1700 m elevation, No. 499, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Hylocurus singularis*, n. sp.

This species is allied to *villifrons* Wood, but it is distinguished by the subcarinate, transverse elevation of the male frons, by the concave,

finely pubescent female frons, and by the different elytral declivity.

FEMALE.—Length 2.4 mm (paratypes 2.0-2.4 mm), 3.0 times as long as wide; color dark reddish brown.

Frons rather deeply concave on circular area on about central half, center of impressed area at upper level of eyes; surface almost smooth, shining, finely punctured, vestiture very fine hairlike, rather abundant, of moderate uniform length. Antennal scape short, ornamented by a few setae; club wider than long, sutures broadly procurved.

Pronotum 1.2 times as long as wide; as in *villifrons* except posterior area very slightly more finely sculptured.

Elytra 1.9 times as long as wide; sides straight and parallel on basal three-fourths, acutely acuminate behind; striae feebly impressed, punctures large, moderately deep; interstriae almost smooth, weakly convex, as wide as striae, punctures almost obsolete except subgranulate toward declivity. Declivity steep, convex; surface densely punctate-reticulate, striae obsolete or nearly so on lower three-fourths; interstriae 1, 2, and 3 weakly elevated, with rather large, rounded granules to lower fourth, 5 and 7 with similar granules to middle, 4, 6, and 8 with granules on upper fourth, 9 acutely, moderately elevated, not serrate, its crest fusing with costal margin. Vestiture limited to declivity where tubercles occur, consisting of rather short, stout, interstitial bristles.

MALE.—Similar to female except slightly stouter; frons broadly convex, with a thick, calluslike, transverse carina on median half immediately below upper level of eyes, vestiture sparse, limited to lower half; anterior margin of pronotum armed by eight rather coarse teeth; tubercles at basal margin of declivity somewhat larger, those on interstriae 2 and to a lesser extent on 4 fused to form a short, acutely elevated, longitudinal crest; declivital tubercles slightly larger, usually pointed, interstriae 9 slightly higher; declivital bristles flattened, much wider, slightly longer.

TYPE LOCALITY.—Eight km southwest of Bumbun, Barinas, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 27 paratypes were taken at the type locality on 11 February 1970, 150 m elevation, No. 313, from an unidentified tree seedling (somewhat similar to Guava) by S. L. Wood.



The holotype, allotype, and paratypes are in my collection.

*Hylocurus flagellatus*, n. sp.

This species is closely allied to *dimorphus* (Schedl), but it is distinguished by the more elaborately decorated female scape, by the deeply, longitudinally sulcate female frons which bears a remarkable tuft of hair on the vertex, and by the flatter male declivity, with a dense covering of scales and shorter tubercles on the circumdeclivital ring.

FEMALE.—Length 2.3 mm (paratypes: females 2.3 mm, males 1.8-2.0 mm), 3.0 times as long as wide; color very dark brown.

Frons with median half deeply, broadly sulcate from vertex to epistoma to accommodate a long, stiff pencil of apparently reddish fused setae arising on a small, circular area of vertex; surface reticulate, becoming subrugulose laterally; other setae minute, recumbent, yellowish. Antennal scape broadly triangular, dorsal margin bearing a fringe of long, yellow hair, ventral margin near insertion of pedicel bearing a small penicillate tuft of reddish, fused hair considerably longer than length of pronotum, and from ventral margin near base a similar tuft of curiously curved hair equal in length to combined lengths of funicle and club; scape very similar to *dimorphus* but all tufts of hair longer; club 1.3 times as long as wide, sutures rather narrowly procurved, 1 not reaching middle.

Pronotum 1.4 times as long as wide; sides almost straight and parallel on basal two-thirds; anterior margin shallowly notched for reception of tuft of setae on vertex, unarmed; summit well in front of middle; asperities on anterior area low; posterior area reticulate, punctures minute, obscure. Vestiture of rather long, coarse, sparse hair.

Elytra 2.0 times as long as wide; sides straight and parallel on basal three-fourths, rather broadly rounded then subobtusely acuminate behind; striae not impressed, punctures small, shallow, obscure toward declivity; interstriae as wide as striae, minutely somewhat irregular, punctures fine, obscure. Declivity steep, convex; surface minutely granular; striae obsolete; interstriae 1 and 3 feebly elevated, small granules in rows on 1-3, scattered in lateral areas, 9 not separately elevated. Vestiture of fine, sparse hair on disc, of short strial and interstitial scales on declivity, scales rather abundant, each about two to three times as long as wide.

MALE.—Similar to female except shorter, stouter; frons convex, without special ornamentation; antennal scape short, simple; anterior margin of pronotum rather narrowly rounded, armed by four teeth; elytra truncate behind, declivity very steep, almost flat; margin of declivity with circumdeclivital ring of interstitial tubercles, each wider than long; declivital striae evidently obsolete, interstriae with fine, evidently confused punctures, vestiture of abundant scales in obscure rows, each scale slightly less than twice as long as wide.

TYPE LOCALITY.—Rancho Grande, Pittier National Park, Aragua, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and five paratypes were taken at the type locality on 9 April 1970, 1100 m elevation, No. 431, from *Nectandra* branches, by S. L. Wood. The gallery systems were typical of the genus.

The holotype, allotype, and paratypes are in my collection.

*Stegomerus mirandus*, n. sp.

This species is distinguished from the four previously described species by the small, confused, elytral punctures on both disc and declivity and by the hairlike vestiture on the elytral disc with no scales intermixed.

FEMALE.—Length 1.4 mm (paratypes 1.2-1.5 mm), 2.5 times as long as wide; color very dark brown to black.

Frons rather narrow, convex, a small, transverse impression immediately above epistomal margin; surface reticulate, with moderately coarse punctures above, finer below; vestiture of sparse, inconspicuous, fine, long hair. Antennal club large, subcircular, with three moderately procurved sutures obscurely marked by rows of fine, short hair.

Pronotum 1.0 times as long as wide; widest on basal third, sides moderately arcuate on basal half, weakly constricted in front of middle and behind indistinct anterolateral angles, rather narrowly rounded in front; anterior margin armed by six small teeth (variable); anterior slope armed by low asperities; summit at middle; posterior area subreticulate, with small, isolated granules of irregular size to base. Vestiture of sparse, short hair.

Elytra 1.5 times as long as wide, 1.6 times as long as pronotum; sides almost straight and parallel on slightly less than basal two-thirds, rather narrowly rounded behind; disc shining, all punctures small, moderately deep, confused.

Declivity convex, rather steep; punctures slightly smaller than on disc, confused. Vestiture on disc of fine, short, hairlike setae; on declivity of abundant, rather short scales, each scale about four to six times as long as wide.

MALE.—Similar to female except frons flattened on lower half; reticulation on pronotal disc less evident.

TYPE LOCALITY.—El Laurel Experimental Farm, 12 km southwest of Caracas, Miranda, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 57 paratypes were taken at the type locality on 1 May 1970, 1300 m elevation, No. 468, from an unidentified vine, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Phacrylus pruni*, n. sp.

This species differs from *bosqui* Schedl and *robustus* Schedl in having either two (male) or no (female) teeth on the anterior margin of the pronotum, in having the frons more strongly convex, and in having clearly defined striae and stria punctures.

FEMALE.—Length 1.7 mm paratypes 1.4-1.8 mm), 2.4 (male 2.2) times as long as wide; color black, with whitish scales.

Frons broadly, evenly convex; surface reticulate-granulate, a few small punctures almost obsolete; vestiture sparse, inconspicuous. Segment 2 of antennal funicle as long as scape, larger than in other species.

Pronotum 0.85 times as long as wide; widest near base, sides arcuately converging to narrowly rounded anterior margin; summit behind middle; asperities on anterior slope narrow, rather small, on median third only; anterior margin unarmed; entire surface finely reticulate-granulate, punctures fine, obscure. Lateral and posterior areas with moderately abundant, short scales and recumbent hair intermixed.

Elytra 1.5 times as long as wide, 1.9 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; striae not impressed, punctures small, deep; interstriae three times as wide as striae, smooth, shining, punctures abundant, fine confused. Declivity rather steep, rather broadly convex; striae weakly impressed, punctures smaller than on disc; interstriae feebly convex. Vestiture of abundant, confused, short scales of uniform length; each scale slightly longer than wide.

MALE.—Similar to female except anterior submargin of pronotum armed by two closely set teeth; pronotal asperities evidently very slightly larger; scales on elytra and pronotum evidently more abundant and slightly longer.

TYPE LOCALITY.—Carbonera Experimental Forest, about 50 km (airline) northwest of Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 250 paratypes were collected at the type locality on 16 September 1969, 2500 m elevation, No. 21, from *Prunus sphaerocarpa*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Pericryphalus*, n. gen.

This genus belongs to the Cryphalini. While a general description of characters might suggest a relationship to *Ptilopodius* Hopkins or other genera from the Indo-Malayan region, its true affinities probably lie more nearly to, but still remote from *Phacrylus* Schedl and perhaps other South American Cryphalini. The emarginate eye, the 3-segmented antennal funicle, and the complete absence of sutures on the antennal club serve to distinguish it.

DESCRIPTION.—Length about 1.0 mm, about 2.3 times as long as wide; vestiture of scales and hair.

Frons simple, broadly convex; eye oval, emarginate, finely faceted; antennal scape rather short; funicle 3-segmented, segments 2 and 3 both narrow, their combined length shorter than pedicel; club flattened, subcircular in outline, pubescent but totally devoid of indications of sutures, slightly shorter than combined length of scape and funicle. Pronotum wider than long, coarsely asperate on strongly declivous anterior slope, anterior margin armed by coarse teeth; basal and posterior third of lateral margin with a fine, raised line. Elytra rather strongly ascending on costal margin toward apex; finely sculptured. Vestiture of scales and hair. Anterior tibiae with few teeth on outer margin on less than distal third. Presumably the male is of reduced size and flightless.

TYPE-SPECIES.—*Pericryphalus pullus* Wood, described below.

*Pericryphalus pullus*, n. sp.

This species superficially might be confused with several other Cryphalini, but the emargin-

ate eye, the 3-segmented antennal funicle, the unsegmented antennal club, and the small, stout body serve to distinguish it.

**FEMALE.**—Length 1.0 mm (paratypes 1.0-1.1 mm), 2.3 times as long as wide; color almost black.

Frons rather strongly convex, weakly impressed above epistoma except on median line; surface minutely, somewhat obscurely rugose-reticulate, punctures rather coarse, moderately close, not clearly defined; vestiture of fine, short, sparse, inconspicuous hair. Eye less than one-third divided by a narrow emargination. Antennal scape rather short, slender; as described above.

Pronotum 0.91 times as long as wide; widest just behind middle, sides moderately arcuate on basal two-thirds, broadly rounded anteriorly but with median fourth slightly produced and armed by four closely set teeth, median pair much larger; summit slightly in front of middle; anterior slope steep, rather coarsely asperate; posterior area subshining or shining, irregularly, very finely reticulate, part of lateral areas smooth, shining, punctures minute, indefinite, a few fine granules behind summit. Vestiture of short, suberect, fine and stout setae of moderate abundance.

Elytra 1.3 times as long as wide, 1.4 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; striae not impressed, punctures minute, almost obsolete; interstriae minutely irregular, punctures uniseriate, minute, not always clearly defined, slightly larger than those of striae. Declivity confined to posterior third, convex, moderately steep; punctures evidently slightly larger than on disc, largely obscured by vestiture; costal margin distinctly flanged (or elevated) to accommodate rather strongly ascending abdomen. Vestiture of fine, very short strial hair and interstitial rows of erect scales; each scale about four times as long as wide, close; both scales and hair more abundant on declivity.

Protibiae with three small teeth on outer, apical margin.

**TYPE LOCALITY.**—Forty km southeast of Socopo, Barinas, Venezuela.

**TYPE MATERIAL.**—The female holotype and 8 female paratypes were taken at the type locality on 25 January 1970, 150 m elevation, No. 274, from the vine known locally as Bejuco Blanco, by S. L. Wood; four female paratypes bear identical data except the collection No.

267, one additional female paratype is from No. 273, and one female paratype No. 250, from the twig of an unidentified tree. The pith tunnels in tiny stems were very similar to those made by certain *Xylosandrus* species.

The holotype and paratypes are in my collection.

*Hypothenemus nanellus*, n. sp.

Apparently this species is more closely allied to *pubescens* Hopkins than to other representatives of the genus, but it is easily distinguished by the stouter body, by the more narrowly rounded apices of pronotum and elytra, and by the much larger antennal club.

**FEMALE.**—Length 1.0 mm (allotype 0.75 mm, female paratype 1.0 mm), 2.2 times as long as wide; color rather dark yellowish brown.

Frons rather weakly convex, a small median pit or impression at upper level of eyes; surface finely rugose-reticulate; sparsely clothed with fine hairlike setae of moderate length. Antennal club large, 1.1 times as long as wide; eye 1.3 times as long as club.

Pronotum 0.9 times as long as wide; widest on basal third, sides moderately arcuate, rather narrowly rounded in front; anterior margin armed by six teeth, teeth spaced by distances not greater than their basal width; summit at middle, slightly impressed behind; posterior surface rather coarsely reticulate, with small setiferous granules of moderate abundance on disc and lateral areas. Vestiture consisting of small erect scales in posterior areas, small bristles in asperate area.

Elytra 1.3 times as long as wide, 1.5 times as long as pronotum; sides straight and parallel on basal half, then gradually arcuately converging toward narrowly rounded apex; striae weakly impressed, punctures small, shallow; interstriae about one and one-half times as wide as striae, feebly convex, subreticulate, punctures granulate, granules in uniseriate rows, rather coarse, moderately close. Declivity beginning at middle, convex; essentially as on disc. Vestiture consisting of uniseriate rows of erect interstitial scales and shorter, inconspicuous strial hair; each scale about twice as long as wide, spaced between rows by slightly more than length of a scale, and within rows by slightly less than length of a scale.

**MALE.**—Similar to female except smaller and eye slightly reduced.

**TYPE LOCALITY.**—Turrialba, Cartago Prov., Costa Rica.



TYPE MATERIAL.—The female holotype, male allotype, and four female paratypes were collected at the type locality on 5 July 1963, at an elevation of about 800 m, by S. L. Wood, from dead twigs of a large, unidentified shade tree in a coffee plantation.

The holotype, allotype, and paratypes are in my collection.

*Hypothenemus ascitus*, n. sp.

This species probably is more closely related to *nanellus* Wood, described above, than to other representatives of the genus, but it is readily distinguished by the larger size, by the narrower elytral scales and the more abundant elytral ground vestiture, by the smaller, oval antennal club, and by other characters.

FEMALE.—Length 1.3 mm (paratypes: males 0.9 mm, females 1.2-1.3 mm), 2.2 times as long as wide; color dark reddish brown, elytra almost black.

Frons convex above, slightly, transversely impressed above epistoma; surface coarsely reticulate above upper level of eyes, punctate and slightly granulate below; a weak median carina on lower third; vestiture sparse, rather short, hairlike, inconspicuous. Antennal club rather small, oval, 1.5 times as long as wide; eye 1.5 times as long as club.

Pronotum 0.9 times as long as wide; as in *nanellus* except teeth on anterior margin spaced, by distances at least twice basal width of a tooth, and posterior area densely, not clearly punctured, with scattered granules; vestiture of slender scales and bristles.

Elytra 1.2 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; striae moderately impressed, punctures rather coarse, deep; interstriae almost as wide as striae, somewhat convex, almost smooth, punctures uniseriate, rather close, minutely subvulcanate. Declivity confined to posterior third, convex, rather steep. Vestiture consisting of uniseriate rows of interstitial scales; each scale about three times as long as wide; and shorter, rather abundant, fine, strial and interstitial hair.

MALE.—Similar to female except smaller, eye partly reduced.

TYPE LOCALITY.—Puerto Viejo, Heredia Prov., Costa Rica.

TYPE MATERIAL.—The female holotype, male allotype, and 10 paratypes were collected at the

type locality on 12 March 1964, at an elevation of about 70 m by S. L. Wood, from just below the outer surface of living bark on the bole of a large, standing healthy tree at least 1 m in diameter.

The holotype, allotype, and paratypes are in my collection.

*Hypothenemus teretis*, n. sp.

This species has scalelike interstitial setae only on the basal half of the elytra; on the posterior half these setae are shorter, hairlike, and may be semirecumbent. In this respect it resembles *dipterocarpi* Hopkins to which it is not closely related. Except for the frons, which is somewhat similar to *parallellus* Hopkins, and the elytra setae, this species resembles *eruditus* Westwood to which it is compared below.

FEMALE.—Length 1.1 mm (paratypes 1.0-1.2 mm), 2.2 times as long as wide; color almost black.

Frons moderately, transversely impressed on lower two-thirds, convex above, with a low, distinct elevation at upper level of eyes occupying median sixth; surface rugose-reticulate, punctures moderately coarse, shallow; vestiture inconspicuous.

Pronotum 0.94 times as long as wide; as in *eruditus*.

Elytra 1.5 times as long as wide; outline as in *eruditus*; striae not impressed, punctures fine, very shallow, seen with difficulty; interstriae subrugulose, at least twice as wide as striae, punctures fine, obscure, uniseriate. Declivity rather steep, convex; striae weakly impressed, otherwise as on disc. Vestiture of rows of very minute strial hair, and rows of interstitial setae; interstitial setae on disc erect, scalelike, each about four to six times as long as wide, these setae on posterior half of elytra represented by shorter, fine, slender, hairlike setae resembling strial setae.

TYPE LOCALITY.—Finca La Lola, Limon, Costa Rica.

TYPE MATERIAL.—The female holotype and two paratypes were taken at the type locality on 10 January 1963, from *Theobroma cacao*, by J. L. Saunders. Other paratypes include: one from Beverley, Limon, Costa Rica, 26 August 1963, 7 m, No. 154, vine; one from Playón, San José, Costa Rica, 22 February 1964, 50 m, No. 449, *Canavalia villosa*; one from 5 km W El Pino, Zulia, Venezuela, 20 October 1969, 10 m, No. 139, *Inga*; five from 20 km SW El Vigía,

22 October 1969, 100 m, No. 81, *Cecropia* petiole, and one 10 December 1969, No. 184, same locality; one from 9 km S Barrancas, Barinas, Venezuela, 5 November 1969, 150 m, No. 101, *Serjania*; two, same locality, 1 October 1969, No. 33; two from 30 km E Palmar, Bolivar, Venezuela, 12 June 1970, 200 m, No. 575, *Sterculia pruriens*; and two from 40 km E Canton, Barinas, Venezuela, 8 March 1970, 70 m, No. 370, tree seedling; all were females and were taken by S. L. Wood.

The holotype and paratypes are in my collection.

*Cryptocarenum coronatus*, n. sp.

This species is distinguished from *diadematus* Eggers by the larger size, by the very different frontal sculpture, and by several other characters mentioned below.

**FEMALE.**—Length 3.0 mm (paratypes 2.8-3.1 mm), 2.5 times as long as wide; color reddish brown.

Frons transversely impressed from upper level of eyes to epistomal margin, this area transversely flat, longitudinally concave; impressed area rather coarsely, closely punctured, more nearly granulate at upper limits of impression and on convex area above to vertex; upper margin of impression with a small, median elevation; epistoma distinct, not strongly elevated; vestiture inconspicuous except for epistomal brush.

Pronotum about as in *diadematus* except anterior slope steeper, asperities larger; anterior margin armed by eight to ten coarse teeth. Glabrous except at margins.

Elytra as in *diadematus* except declivity slightly steeper, more strongly convex, declivital interstriae 2 less strongly impressed, more nearly convex; vestiture more abundant, apices of setae wider.

**TYPE LOCALITY.**—Twenty km southwest of El Vigia, Merida, Venezuela.

**TYPE MATERIAL.**—The female holotype was taken at the type locality on 21 November 1969, 50 m elevation, No. 150, from a Bignoniaceae vine, by S. L. Wood. Three female paratypes were taken in Venezuela, one from each of the following localities: 8 km SW Bumbun, Barinas, 11-11-70, No. 325, *Nectandra* twig; 40 km SE Socopo, Barinas, 25-1-70, No. 255, from a cut tree seedling; Campamento Rio Grande, 30 km E Palmar, Bolivar, 200 m elevation, 12-VI-70, No. 566, Suipo; all by S. L. Wood. Pith tunnels in small stems were made by this species.

The holotype and paratypes are in my collection.

*Cryptocarenum lepidus*, n. sp.

This species is rather closely allied to *laevigatus* Blandford, but may be distinguished by the longitudinally carinate tubercle (often a complete carina from epistoma to vertex), by the shorter elytral vestiture, and by the lighter color.

**FEMALE.**—Length 1.7 mm (female paratypes 1.6-1.9 mm), 2.6 times as long as wide; color rather dark reddish brown (some specimens very dark).

Frons rather weakly, transversely impressed from just above epistomal margin to just below upper level of eyes, convex above, a fine, low carina extending from epistoma to vertex but higher at upper level of eyes (not evident on lower half in several specimens); epistomal margin shallowly, broadly emarginate; surface finely granulate-punctate, with several low, irregular, longitudinal rugae on upper two-thirds; vestiture consisting of rather sparse, fine hairlike setae.

Pronotum 1.0 times as long as wide; widest just behind middle, sides on basal two-thirds rather weakly arcuate, constricted just behind anterior margin, rather broadly rounded in front; anterior margin armed by 11 closely placed teeth (seven to ten in most specimens); summit at middle; posterior area obscurely marked by fine points, lines, and a few punctures, subreticulate laterally. Anterior and lateral areas bearing a few short, stout hairs.

Elytra 1.5 times as long as wide, 1.6 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; striae not impressed except 1 feebly impressed toward declivity, punctures small, distinct, rather shallow; interstriae about twice as wide as striae, subshining, surface obscurely marked by numerous minute points. Declivity rather steep, convex; striae 1 narrowly rather deeply impressed, 2 rather weakly, irregularly impressed, punctures smaller, less regular than on disc; interstriae 1 weakly elevated, surface more irregular; scattered punctures on all interstriae, a few of them very feebly granulate. Vestiture confined to sides and declivity, consisting of sparse, slender, spatulate bristles and a few minute, strial, hairlike setae.

**MALE.**—Smaller than female. Only one male, with head and pronotum lost, was available for study.

TYPE LOCALITY.—Beverley, Limon Prov., Costa Rica.

HOST.—A woody vine, probably *Serjania* sp. (type), *Canavalia villosa*, and at least two tree species (paratypes).

TYPE MATERIAL.—The female holotype and seven paratypes were collected at the type locality on 26 August 1963, at an elevation of about 10 m, from a cut woody vine 1-3 cm in diameter. Other paratypes were taken in Costa Rica as follows: 6 from Pandora, Limon Prov., 23 August 1963, 50 m elevation, from a broken branch; 2 from Playón, 22 February 1964, and 2 from Volcan, 11 December 1964, Puntarenas Prov.; 7 from Santa Ana, 30 August 1963, 1300 m elevation and 1 from San Isidro del General, 13 December 1963, 1000 m elevation, San José Prov. One paratype was taken at Palin, Esquintla Prov., Guatemala, 19 May 1964, 1000 m elevation from a broken branch of a large tree. All were collected by S. L. Wood.

The holotype and paratypes are in my collection.

*Dendrocranulus tardulus*, n. sp.

This species is readily distinguished from *tardus* Schedl by the smaller size and by the distinctly impressed declivital interstriae 2.

MALE.—Length 1.5 mm (paratypes 1.4-1.5 mm), 3.0 times as long as wide; color light brown.

Frons convex above eyes, rather shallowly, transversely impressed below; surface shining, closely, subgranulately punctured; vestiture very fine, long, rather sparse, hairlike.

Pronotum 1.2 times as long as wide; widest just behind middle, sides moderately arcuate, rather broadly rounded in front; summit indefinite, well in front of middle; surface almost smooth, with a few minute points, punctures on disc rather coarse, close, separated by distances about equal to their diameters, becoming somewhat finely asperate in lateral areas. Vestiture consisting of rather sparse, erect hair.

Elytra 1.6 times as long as wide, 1.3 times as long as pronotum; sides almost straight and feebly dilated on basal two-thirds, then slightly narrowed to just before apex, and abruptly rounded to very broadly rounded, almost straight posterior margin; striae not impressed, punctures rather large, deep; interstriae slightly wider than striae, smooth and shining, punctures almost as large and deep as those of striae, separated by distances about equal to twice diameter of a

puncture. Declivity steep, almost flat; postero-lateral margin subacutely elevated from apex to interstriae 7, interstriae 2 almost flat, impressed, 1 and area lateral to 2 moderately elevated; striae and interstitial punctures somewhat smaller than on disc, those of interstriae very finely granulate. Vestiture consisting of erect, blunt, rather long interstitial bristles.

FEMALE.—Similar to male except frons evenly convex and more closely pubescent; declivital interstriae 2 feebly if at all impressed, weakly convex, 1 and lateral areas less strongly elevated; vestiture finer.

TYPE LOCALITY.—Rio Damitas in the Dota Mountains, San José Prov., Costa Rica.

TYPE MATERIAL.—The male holotype, female allotype, and 10 paratypes were collected at the type locality on 18 February 1964, at an elevation of about 250 m, by S. L. Wood; the holotype and two paratypes were taken from an unidentified vine, the others from Chayote.

The holotype, allotype, and paratypes are in my collection.

*Dendrocranulus diversus*, n. sp.

This species appears to be somewhat variable, but it may be distinguished from *costaricensis* Schedl and other allied species by the more broadly impressed declivity, the impression reaching interstriae 4.

MALE.—Length 2.7 mm (paratypes 2.0-2.9 mm), 2.5 times as long as wide; color very dark brown.

Frons convex above eyes, rather strongly transversely impressed from upper level of eyes to epistoma; epistomal margin broadly emarginate, upper tooth on mandibles projecting anteriorly and partly filling this emargination; surface reticulate almost to epistomal margin, rather closely, deeply punctured, many punctures granulate; vestiture consisting of rather long, sparse hair.

Pronotum 1.1 times as long as wide; widest just behind middle, sides strongly arcuate from base to rather narrowly rounded anterior margin; posterior surface almost smooth and shining, punctures moderately large, deep, close, each puncture with a very minute lateral granule (almost imperceptible at center), granules increasing in size laterally. Vestiture bristlelike, almost entirely limited to lateral and asperate areas.

Elytra 1.3 times as long as wide, 1.2 times as long as pronotum; sides arcuately narrowed



from level of declivital base to level of sutural apex, posterior margin straight or feebly, broadly emarginate over about two-thirds of elytral width; striae 1 feebly, others not impressed, punctures small, close, rather deep; interstriae about twice as wide as striae, surface obscurely etched by minute points and lines, punctures slightly smaller than those of striae and about half as numerous. Declivity rather abrupt, steep, broadly, shallowly concave; posterolateral margin obtusely rounded, strongly elevated from apex to interstriae 4, conspicuously higher than 1; interstriae 1 weakly elevated, 2 wider and impressed, all interstriae with a median row of fine granules; striae 1, 2, and 3 with punctures rather strongly impressed. Vestiture consisting of interstitial rows of erect bristles.

FEMALE.—Similar to male except frons less strongly impressed (flat or weakly concave in some paratypes); in some specimens posterolateral margin of declivity less strongly developed.

TYPE LOCALITY.—Puerto Viejo, Limon Prov., Costa Rica.

TYPE MATERIAL.—The male holotype, female allotype, and 14 paratypes were collected at the type locality on 12 March 1964, at an elevation of about 70 m, by S. L. Wood, from an unidentified vine. Other paratypes were taken in Costa Rica as follows: 4 at Pandora, Limon Prov., 23 August 1963; 3 at Turrialba, Cartago Prov., 9 March 1964; 16 at Rio Damitas in the Dota Mountains, San José Prov., 18 February 1964; and 5 at Playón, Puntarenas Prov., 22 February 1964; all were taken from unidentified vines by S. L. Wood. Three specimens not included in the type series are from La Lima, Honduras, 5 May 1964, in *Cayaponia microdonta*.

The holotype, allotype, and paratypes are in my collection.

*Dendrocranulus pumilus*, n. sp.

This species is very closely related to *schedli* Wood, but may be distinguished by the reticulate pronotum, by the smaller elytral punctures, and by the small nodules associated with discal punctures on the pronotum.

MALE.—Length 1.3 mm (allotype 1.45 mm), 2.7 times as long as wide; color yellowish brown.

Frons convex above, transversely impressed one-third below upper level of eyes; surface reticulate, punctures coarse, deep; vestiture hairlike, rather sparse. Antennal club with sutures 1 and 2 weakly procurved, 1 near middle of club.

Pronotum evidently 1.3 times as long as wide (partly obscured by glue); widest just behind middle, sides moderately arcuate from base to rather narrowly rounded anterior margin; asperities small, isolated, poorly developed; posterior surface reticulate, punctures coarse, moderately close, each with a minute granule on lateral side; vestiture hairlike, inconspicuous.

Elytra 1.9 times as long as wide, 1.4 times as long as pronotum; sides almost straight and parallel on basal two-thirds then gradually narrowed to broadly rounded posterior margin; striae not impressed, punctures coarse, deep; interstriae equal to or slightly narrower than striae, punctures about two-thirds as large as those of striae and slightly less abundant. Declivity steep, flattened between third striae; striae punctures almost as large and as deep as on disc; interstriae 1 moderately elevated, 2 impressed (at least medially), gradually ascending laterally to interstriae 3; interstitial punctures less abundant than on disc, not at all granulate. Vestiture consisting of rows of erect interstitial bristles (abraded on most of declivity).

FEMALE.—Similar to male except frontal impression feebly developed; elytral declivity weakly, more narrowly impressed.

TYPE LOCALITY.—Rio Damitas in the Dota Mountains, San José Prov., Costa Rica.

TYPE MATERIAL.—The male holotype and female allotype were collected at the type locality on 18 February 1964, at an elevation of about 250 m, by S. L. Wood, from the stems of an unidentified vine.

The holotype and allotype are in my collection.

*Dendrocranulus limus*, n. sp.

This species is distinguished from the closely allied *tardus* Schedl by the rather strongly convex elytral declivity, by the less strongly elevated posterolateral margin of the declivity, and by the more widely spaced striae punctures.

MALE.—Length 1.8 mm (paratypes 1.7-2.0 mm), 2.7 times as long as wide; color light reddish brown.

Frons weakly convex; surface reticulate and rather coarsely, not deeply punctured, reticulation and punctures reduced toward center on lower half; vestiture rather sparse, consisting of fine, long hair.

Pronotum 1.2 times as long as wide; sides of middle third almost straight and parallel,

posterior angles broadly rounded, anterior angles arcuately converging toward broadly rounded anterior margin; dorsal profile arcuate from base, a little more strongly declivous on anterior third; surface shining, with few points, punctures rather coarse, deep, separated by distances equal to width of a puncture, lateral margin of each puncture very finely asperate, tubercles becoming larger laterally. Vestiture hairlike, inconspicuous except laterally and in asperate area.

Elytra 1.6 times as long as wide, 1.3 times as long as pronotum; sides straight and parallel on slightly more than basal two-thirds, broadly rounded behind; striae not impressed, punctures large, deep; interstriae slightly wider than striae, almost smooth, shining, punctures two-thirds as large as those of striae, spaced one to two times diameter of a puncture. Declivity steep, distinctly convex; posterolateral margin acutely elevated from apex to interstriae 7; striae weakly impressed; interstriae weakly convex, punctures reduced and feebly granulate. Vestiture consisting of erect, interstitial bristles.

FEMALE.—Similar to male except frons bearing a rather dense fringe of long yellow hair to well above eyes, except central area glabrous.

TYPE LOCALITY.—Rio Damitas in the Dota Mountains, San José Prov., Costa Rica.

TYPE MATERIAL.—The male holotype, female allotype, and 19 paratypes were collected at the type locality on 18 February 1964, at an elevation of 250 m, by S. L. Wood, from stems of an unidentified vine; 22 paratypes were taken at Playón, Puntarenas Prov., 22 February 1964, at 50 m elevation, by S. L. Wood, from a wild cucurbit vine.

#### *Xyleborus ebenus*, n. sp.

This species is very closely related to *sanguinicollis* Blandford; it is readily distinguished from that species by the black pronotum, by the shining elytral declivity, with striae punctures small and clearly impressed. The declivital differences are conspicuous at a magnification of 80 diameters.

FEMALE.—Length 3.8 mm (paratypes: female 3.7-3.9 mm, male 3.1 mm), 2.0 times as long as wide; mature color uniformly black.

Frons as in *sanguinicollis* except punctures reduced in number and size. Posterior area of pronotum as in *sanguinicollis* but more uniformly reticulate, punctures less clearly impressed. General sculpture of elytral declivity as in *sanguini-*

*collis*; both species vary within limits but average dentition about the same; striae and interstitial punctures minute but clearly impressed, general surface between punctures appearing smooth on lower half, small points visible on upper half of declivity.

MALE.—Slightly smaller than female; pronotal asperities reduced, posteromedian part of pronotum gradually elevated to acutely precipitous posterior margin; elytral declivity more gradual, upper denticles absent, lateral margin rather weakly elevated above major spine.

TYPE LOCALITY.—Guapiles, Limon Prov., Costa Rica.

TYPE MATERIAL.—The female holotype and 15 paratypes were collected at the type locality on 22 August 1966, at an elevation of about 100 m, from a recently cut sapling. Other paratypes include: 2 from Turrialba, Cartago, Costa Rica, 9 March 1964, 700 m elevation; 3 from Cerro Campana, Panama, 26 July 1966, 1000 m elevation; 1 from Volcan Chiriqui, Panama, 11 January 1964, 1800 m elevation; 1 from Limon Bay, Canal Zone, Panama, 30 December 1963, sea level; all collected by myself; and 1 from Zant, Limon, Costa Rica, Flora E, Salas No. AB, 30 May 1956, at 57A4B, in Cacao.

The holotype, allotype, and paratypes are in my collection.

#### *Mimips mimicus* Schedl

Fig. 1

This species was described (Schedl, 1961, Pan Pacific Ent. 37:227) from specimens taken



FIG. 1. *Mimips mimicus*: posterolateral aspect of male elytral declivity.

at light in Costa Rica. Since then it has been taken from the following localities. PANAMA: Barro Colorado Island, Canal Zone, 27-XII-63, 70 m elevation, No. 340, tree limb; Ft. Clayton, Canal Zone, 22-XII-63, 30 m elevation, No. 303, tree limb. VENEZUELA: 9 km S Barrancas, Barinas, 5-XI-69, 50 m elevation, No. 115, *Spondias mombin*; 40 km E Canton, Barinas, 8-III-70, 70 m elevation, No. 394, *Spondias mombin*. All were taken by me; apparently they all came from the same host species. Its length is 1.6-2.0 mm.

*Mimips analogus*, n. sp.

Fig. 2

This species is almost identical to *mimicus* Schedl, but it is distinguished by the male frons and by other characters indicated in the following description.



FIG. 2. *Mimips analogus*: posterolateral aspect of male elytral declivity.

MALE.—Length 2.0 mm (paratypes 1.9-2.4 mm), 2.4 times as long as wide; color yellowish brown.

Frons rather strongly convex above, lower third strongly, abruptly, transversely impressed; surface rather coarsely punctate-granulate; vestiture sparse, fine, long. Antenna as in *mimicus*.

Pronotum 1.03 times as long as wide; as in *mimicus* except anterior margin unarmed and discal area smooth, shining (partly reticulate in *mimicus*).

Elytra 1.4 times as long as wide; as in *mimicus* except ventrolateral margin of declivity more evenly elevated, basal area of second tooth

usually much more strongly developed, and setae on declivital interstriae 1 slender, longer, these setae stout and blunt in *mimicus*; punctures on elytral disc very slightly smaller.

FEMALE.—Similar to female of *mimicus* except frons much more convex, with a slight, transverse impression above epistoma, its surface smoother, more sharply punctured, its vestiture finer, not quite as long; anterior margin of pronotum unarmed; declivities differ as in males.

TYPE LOCALITY.—Forty km E Canton, Barinas, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 30 paratypes were taken at the type locality on 8 March 1970, 70 m elevation, No. 394, from *Spondias mombin*, by S. L. Wood. They were taken from branches 3-8 cm in diameter; *mimicus* was in branches 2-3 cm in diameter in the same limb.

The holotype, allotype, and paratypes are in my collection.

*Mimips fortis*, n. sp.

Fig. 3

Evidently this species is allied to *analogus* Wood, but it is easily distinguished by the larger size and by the presence of only two pairs of teeth on the elytral declivity.

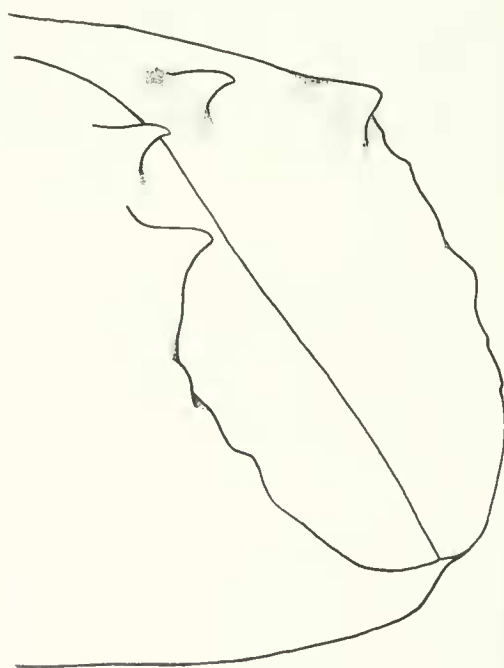


FIG. 3. *Mimips fortis*: posterolateral aspect of male elytral declivity.



MALE.—Length 2.5 mm (paratypes 2.3-2.4 mm), 2.6 times as long as wide; color very dark brown.

Frons as in *analogus* except transverse impression much weaker; vestiture sparse, fine. Pronotum as in *analogus* except anterior margin indistinctly serrate, discal punctures slightly larger, not as close.

Elytra 1.5 times as long as wide; disc as in *analogus* but punctures very slightly smaller, deeper; stria and interstria punctures equal in size. Declivity very steep, truncate, broadly concave; lower two-thirds margined by an elevated, subacute, continuous, slightly undulating ridge, upper third armed by two coarse teeth (directed caudad), one in line with interstriae 2, second in line with interstriae 4; face of declivity shining, with moderately abundant, large, shallow punctures. Vestiture of rather long, fine, interstria hair, a few supplemental setae near declivity.

TYPE LOCALITY.—Finca Taboga, about 15 km southwest of Cañas, Guanacaste, Costa Rica.

TYPE MATERIAL.—The male holotype and two male paratypes were taken at the type locality on 8 February 1967, from a fallen tree. One male paratype was taken at Fort Clayton, Canal Zone, Panama, on 22 December 1963, presumably from *Spondias mombin*, by S. L. Wood.

The holotype and paratypes are in my collection.

*Mimips bidens*, n. sp.

Fig. 4

This species is somewhat intermediate between *chiriquensis* (Blandford) and *fortis* Wood, but it is distinguished by the larger size, and by having only one pair of widely separated declivital teeth.

MALE.—Length 2.8 mm (paratypes 2.6-3.0 mm), 2.6 times as long as wide; color reddish brown.

Frons broadly convex, a rather large, low median elevation just below upper level of eyes; surface minutely subaciculate, with isolated, uniformly distributed, moderately large granules; vestiture fine, sparse.

Pronotum as in *fortis* except discal surface subreticulate, punctures fine.

Elytra 1.4 times as long as wide; about as in *fortis* except stria and interstria punctures rather small, deep, moderately confused from striae 3 to suture. Declivity steep, truncate, broadly excavated; margin acutely, continuously,

strongly elevated on lower two-thirds, one coarse, blunt tooth in line with interstriae 4, upper margin between tooth and suture rounded; in declivital face suture moderately elevated, surface shining, punctures rather coarse, impressed, confused. Vestiture of sparse, moderately long, fine, interstria hair, with supplementary setae in declivital margin.

FEMALE.—Similar to male except frons flattened, feebly impressed above, a feeble median elevation below, surface uniformly covered by small, isolated, setiferous granules, vestiture fine, long, abundant; declivital teeth displaced mesally, in line with striae 2, smaller, located slightly below upper margin of declivity.

TYPE LOCALITY.—Eight km south of Colonia (near Buenaventura), Valle de Cauca, Colombia.

TYPE MATERIAL.—The male holotype, female allotype, and 102 paratypes were taken at the type locality on 9 July 1970, 30 m elevation, No. 628, in *Icica altissima*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Mimips uncinatus*, n. sp.

Fig. 5

This species evidently is closely allied to *bidens* Wood and *chiriquensis* (Blandford), but

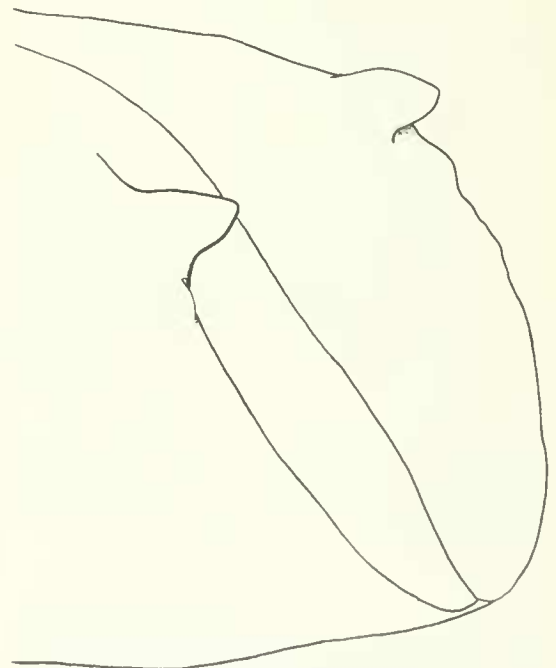


FIG. 4. *Mimips bidens*: posterolateral aspect of male elytral declivity.



FIG. 5. *Mimips uncinatus*: posterolateral aspect of male elytral declivity.

it differs in the details of the frontal and elytral declivital sculpture.

MALE.—Length 1.4 mm (paratypes 1.4-1.7 mm), 2.7 times as long as wide; color reddish brown.

Frons broadly convex; surface minutely aciculate, with small, moderately sparse granules to upper level of eyes, a small, central fovea usually present; vestiture fine, long, moderately abundant. Pronotum as in *bidens*.

Elytra 1.7 times as long as wide; strial and interstitial punctures small, shallow, in rows, of equal size, surface almost smooth, shining. Declivity steep, truncate, broadly concave; lower two-thirds of margin subacutely elevated, ridge ending above in large tooth in line with interstriae 2, tooth directed mesad, slender at its apex and hooked toward suture; declivital margin rounded between teeth; concavity about as in *fortis*. Vestiture of short strial and long interstitial, fine hair, longer, coarser and with supplemental setae at base of declivity.

FEMALE.—Similar to male except median third of vertex transversely etched as on a stridulating organ.

TYPE LOCALITY.—Colonia Tovar, Aragua, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 15 paratypes were taken at the type locality on 4 May 1970, 1700 m elevation,

No. 483, by S. L. Wood, from branches of an unidentified tree. Additional paratypes bear identical data except three are No. 498, two are No. 495, 42 are No. 500, and one is No. 509.

The holotype, allotype, and paratypes are in my collection.

*Mimips ocellaris*, n. sp.

Fig. 6

This small, conservatively sculptured species is not closely related to any described species. It is distinguished by the rather narrowly separated eyes, and by other characters.

FEMALE.—Length 2.0 mm (paratypes 1.7-2.0 mm), 2.8 times as long as wide; color reddish brown.

Frons convex above, flattened toward epistoma; lower third subaciculate, coarse isolated granules in upper and lateral areas, shining, smooth between granules in upper areas; vestiture very fine, long, rather sparse hair. Eyes very large, separated above by a distance almost equal to width of an eye.

Pronotum 1.14 times as long as wide; outline as in *mimicus*; anterior margin finely serrate; posterior area rather coarsely, sharply punctured, with obscure indications of reticulations at margins of punctures, shining. Vestiture of fine hair at margins.

Elytra 1.7 times as long as wide, 1.4 times as long as pronotum; sides straight and parallel on basal three-fourths, broadly rounded behind; strial and interstitial punctures equal in size, small, confused. Declivity steep, narrowly, shallowly concave; margin obtusely rounded on lower two-thirds, summit armed on upper two-thirds by three very small, rounded granules, a

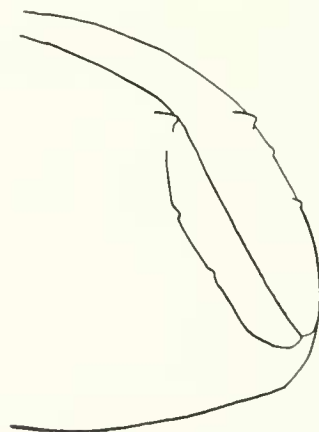


FIG. 6. *Mimips ocellaris*: posterolateral aspect of male elytral declivity.

moderately large, pointed tooth in line with interstriae 2, mesad and very slightly above upper granule of lateral margin; concave area shallow, transversely oval, with numerous small, confused punctures. Vestiture of moderately abundant, short, hairlike ground cover, and rather sparse, longer setae, long setae rather stout on declivity.

MALE.—Similar to female except frons more sparsely pubescent.

TYPE LOCALITY.—Eight km south of Colonia (near Buenaventura), Valle de Cauca, Colombia.

TYPE MATERIAL.—The female holotype, male allotype, and 19 paratypes were taken at the type locality on 9 July 1970, 30 m elevation, No. 628, from *Icica altissima*, by S. L. Wood. These specimens were in the same small tree with *bidens*.

The holotype, allotype, and paratypes are in my collection.

#### *Styphlosoma granulatum* Blandford

The genus *Styphlosoma* Blandford (1904, Biol. Centr. Amer., Coleopt. 4[6]:232) was named from a unique male specimen from Volcan de Chiriqui, Panama. This genus and species has remained almost unknown since its description except for references to the type. A long series was taken at Finca Taboga, about 15 km southeast of Cañas, Guanacaste Prov., Costa Rica, on 2 February 1967, by R. W. Matthews, from the bark of *Spondias mombin*. Since the remarkable female has not been described the following will aid in the recognition of this species.

FEMALE.—Length 1.3-1.5 mm, 2.4 times as long as wide; color very dark brown.

Frons flat from eye to eye from epistomal margin to vertex; epistomal margin very deeply emarginate, emargination almost attaining upper level of eyes, rather broadly U-shaped, wider than deep, its arms diverging slightly; surface almost smooth, with dense, uniformly distributed, rather coarse, deep punctures over entire flattened area; dorsomesal angle of cutting surface of mandibles greatly extended and curved cephalad into a median, projecting process; this process projecting from fundus of epistomal emargination a distance equal to almost half length of scape; vestiture rather abundant, very short, inconspicuous. Antenna as described and figured by Blandford; funicle clearly 5-segmented; suture 1 moderately procurved, 2 very

strongly procurved, segments 1 and 2 smooth and glabrous except for rows of setae at sutures.

#### *Styphlosoma subulatum*, n. sp.

This species is very closely related to *granulatum* Blandford, but it is distinguished by the shallowly impressed female frons with finer punctures, by the deeper, narrower female epistomal emargination, by the finer interstitial punctures, and by the slightly narrower declivital impression.

FEMALE.—Length 1.6 mm (paratypes 1.4-1.6 mm), 2.4 times as long as wide; color very dark brown.

Frons as in *granulatum* except feebly plano-concave, upper margin more abrupt; surface reticulate, punctures smaller, obscured in central area; sides of epistomal emargination more nearly parallel; mandibular processes very slightly longer.

Pronotum 1.1 times as long as wide; as in *granulatum* but very slightly more finely sculptured.

Elytra 1.4 times as long as wide; sides almost straight and parallel on basal two-thirds, very broadly rounded behind; striae 1 weakly impressed, striae punctures moderately coarse, rather deep, close; interstriae as wide as striae, smooth, punctures fine, close, in rows except slightly confused toward base (larger and more strongly confused in *granulatum*). Declivity very steep, appearing somewhat flattened from dorsal aspect; striae punctures smaller than on disc; interstitial punctures about as on disc; interstriae 2 narrowed, strongly, narrowly impressed on central two-thirds of declivity. Vestiture on striae and alternate interstitial setae of short, suberect, rather coarse hair; alternate interstitial setae forming rows of slightly longer scales, each scale about three times as long as wide (alternate arrangement of hair and scales on interstriae of *granulatum* not at all regular).

MALE.—Similar to female except frons with a strongly developed, transverse carina at upper level of eyes, convex above, strongly, transversely impressed below carina, surface coarsely, closely punctured, upper area also reticulate.

TYPE LOCALITY.—Nine km south of Barancas, Barinas, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 51 paratypes were taken at the type locality on 2 December 1969, 150 m elevation, No. 165, from *Astronium graviolens*, by



S. L. Wood. The flattened nuptial chamber is apparently standing on its edge in thick bark, with one axis parallel to the grain of wood, the other perpendicular to the cambium surface, but not reaching the cambium. From its inner angles one to four egg galleries branch, usually two each from the upper and lower angles; these angle diagonally from the nuptial chamber 2-4 mm to the cambium. The egg tunnels then continue along the cambium on a straight or slightly curved course. Eggs are deposited in niches and larval development starts in the cambium. Only newly hatched larvae were present.

The holotype, allotype, and paratypes are in my collection.

*Dendroterus eximius*, n. sp.

Among described species this one is most nearly allied to *texanus* Wood, although the relationship is not close. It is distinguished by the much more finely punctured pronotum and elytra, and by the impressed female frons.

FEMALE.—Length 2.3 mm (paratypes 1.7-2.1 mm), 2.8 times as long as wide; color reddish brown.

Frons broadly, transversely impressed on lower half, epistoma slightly elevated; surface reticulate above, becoming smooth below, upper area with small, moderately abundant, shallow punctures; vestiture moderately abundant, of rather long, fine hair. Antennal funicle with four strongly compressed segments; club longer than wide.

Pronotum 1.2 times as long as wide; widest on basal half, sides weakly arcuate, narrowly rounded in front; anterior margin armed by about six teeth, median pair much larger; summit at middle; asperities rather coarse, not continued behind summit; posterior area reticulate, punctures very small, shallow, rather sparse. Vestiture rather sparse, hairlike.

Elytra 1.7 times as long as wide, 1.4 times as long as pronotum; sides almost straight and parallel on basal two-thirds, narrowly rounded behind; striae not impressed, punctures rather small, shallow; interstriae wider than striae, rather obscurely reticulate, dull, punctures fine, very sparse except toward declivity. Declivity rather steep, convex; striae punctures minute, weakly impressed; interstitial punctures replaced by fine, uniseriate rows of granules. Vestiture largely confined to declivity, consisting of minute striae hair and rows of much longer, erect interstitial hair; each hair stout, about as long

as distance between rows, spaced more closely within a row; all declivital setae diverge very slightly away from suture.

MALE.—Similar to female except frons convex, weakly impressed immediately above epistoma, surface very finely, obscurely punctured, vestiture sparse, inconspicuous.

TYPE LOCALITY.—Lago Amatitlan, Esquintla, Guatemala.

TYPE MATERIAL.—The female holotype, male allotype, and 67 paratypes were collected at the type locality on 10 June 1964, 700 m elevation, No. 707, *Bursera* branch, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Dendroterus parilis*, n. sp.

This species is very closely related to *eximius* Wood, but it is distinguished by the more strongly impressed female frons, by the deeper pronotal punctures, by the greatly reduced striae punctures, by the much more numerous, deeper, impressed points on the elytra, and by the much less abundant elytral hair.

FEMALE.—Length 2.0 mm (paratype 1.9 mm), 2.8 times as long as wide; color very dark reddish brown.

Frons as in *eximius* except very slightly more strongly impressed. Pronotum as in *eximius* except discal reticulation stronger, punctures deeper, more sharply impressed.

Elytra as in *eximius* except surface shining, striae punctures minute, shallow, some of them little larger than abundant, sharply impressed, minute points; surface of disc with many shallowly impressed, irregular lines; interstitial punctures on declivity less distinctly granulate. Vestiture about half as abundant as in *eximius*.

TYPE LOCALITY.—Santa Ana, San José, Costa Rica.

TYPE MATERIAL.—The female holotype and one female paratype were taken at the type locality on 8 November 1963, 1300 m elevation, No. 253, from a *Bursera simarubra* branch, by S. L. Wood.

The holotype and paratype are in my collection.

*Dendroterus sodalis*, n. sp.

This species is allied to *eximius* Wood, but it is distinguished by the convex, subglabrous female frons, by the subshining pronotum and elytra with sharply impressed, moderately large

punctures, and by the weakly impressed declivital interstriae 2.

**FEMALE.**—Length 1.7 mm (paratypes 1.4-1.8 mm), 2.6 times as long as wide; color dark reddish brown.

Frons broadly convex; surface subshining, small, finely granulate punctures rather close, uniformly distributed; vestiture very short, hair-like, moderately abundant. Funicle 4-segmented.

Pronotum 1.2 times as long as wide; as in *eximius* except teeth on anterior margin much smaller; posterior area subshining, surface subreticulate with many impressed points, punctures moderately large, deep, sparse. Glabrous.

Elytra 1.6 times as long as wide, 1.4 times as long as pronotum; sides straight and parallel on basal two-thirds, rather broadly rounded behind; striae not impressed, punctures moderately large, deep; interstriae almost twice as wide as striae, almost smooth, shining, impunctate except on 1 and on others toward declivity. Declivity steep, broadly convex; striae punctures slightly smaller, not as deep; interstriae 1 abruptly, slightly elevated, 2 impressed, 3 weakly elevated, each with a row of fine rounded granules except absent on lower half of 2. Vestiture of moderately long, coarse, rather widely spaced hair on and near declivity.

**MALE.**—Similar to female except frons more narrowly convex, vestiture less distinct.

**TYPE LOCALITY.**—Volcan de Agua, Esquintla, Guatemala.

**TYPE MATERIAL.**—The female holotype, male allotype, and 43 paratypes were taken at the type locality on 19 May 1964, 1000 m elevation, No. 595, from *Bursera*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Dendroterus resolutus*, n. sp.

This species is distinguished from the closely allied *sallaei* Blandford by the very different frons in both sexes, by the smooth, shining pronotal disc with the punctures much more sharply defined, and by the finer elytral punctures.

**FEMALE.**—Length 1.9 mm (paratypes 1.5-1.9 mm), 2.7 times as long as wide; color yellowish brown to almost black.

Frons moderately convex on upper two-thirds, lower third broadly, rather strongly, transversely impressed, epistomal margin slightly elevated, a distinct, median tubercle on epistomal margin; surface shining, punctures moder-

ately large, rather deep, sparse in central area, rather dense on lateral and upper margins, extending well above upper level of eyes; vestiture of fine, long hair, sparse at center, rather abundant on margins. Antennal funicle 4-segmented; club 1.3 times as long as wide, sutures straight, 1 partly septate.

Pronotum 1.2 times as long as wide; as in *sallaei* except asperities distinctly larger; posterior area shining, deeply, coarsely, closely punctured. Hairlike vestiture short on disc, longer at sides, moderately abundant.

Elytra 1.5 times as long as wide, 1.3 times as long as pronotum; sides almost straight and parallel on basal two-thirds, broadly rounded behind; striae not impressed, punctures moderately small, deep; interstriae shining, about as wide as striae, punctures rather small, uniseriate. Declivity steep, flattened, striae 1 and 2 moderately impressed, punctures as on disc; interstriae 1 convex, weakly elevated, 2 impressed but weakly convex, 3 weakly elevated; all interstriae with a row of fine, rounded tubercles, those on 2 smaller. Vestiture of rows of stout, moderately long, interstitial hair, much shorter on declivity.

**MALE.**—Similar to female except frons convex to epistoma, punctures rather coarse, uniformly distributed, vestiture sparse, evenly distributed, epistomal tubercle absent.

**TYPE LOCALITY.**—Playa del Coco, Guacaste, Costa Rica.

**TYPE MATERIAL.**—The female holotype, male allotype, and 28 paratypes were taken at the type locality on 18 October 1963, 15 m elevation, from the bole of *Bursera simarubra*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Dendroterus defectus*, n. sp.

This species is not closely related to other described species of this genus. It is distinguished by the rather large size, by the unarmed anterior margin of the pronotum, by the distinctive frons, by the small striae punctures, and by the sculpture of the interstriae.

**FEMALE.**—Length 2.5 mm (paratypes 2.3-2.9 mm), 2.4 times as long as wide; color yellowish brown.

Frons broadly impressed from epistomal margin to well above eyes, flat on transverse axis, shallowly concave on longitudinal axis; surface very densely, rather coarsely punctured and

evidently very finely granulate except smooth, impunctate and shining on median area along epistoma; vestiture of rather abundant, fine, moderately long hair of uniform length. Antennal funicle 4-segmented; club wider than long.

Pronotum 1.1 times as long as wide; widest at base, sides weakly arcuate, converging slightly on basal half, feebly constricted in front of middle, rather narrowly rounded in front, with a feeble, pseudoemargination on median line; anterior margin weakly elevated, not at all serrate; summit indefinite, behind middle; asperities small, decreasing in size gradually from center, posterior area punctate-subasperate to base, punctures rather small, moderately deep, some reticulation present. Glabrous.

Elytra 1.3 times as long as wide, 1.3 times as long as pronotum; sides almost straight and parallel on basal two-thirds, broadly rounded behind; striae not impressed, punctures small, moderately deep; interstriae shining, twice as wide as striae, surface with many rather deep, irregular, subtransverse lines and moderately large, impressed points, punctures small, slightly irregular. Declivity rather steep, rather broadly flattened; striae slightly impressed, punctures deeper than on disc; flattened between interstriae 4. Almost glabrous, a very few minute, hairlike setae on declivity.

MALE.—Similar to female except frons strongly convex above eyes, a very strong, narrow, transverse impression on median three-fourths, area between impression and epistomal margin moderately inflated, glabrous, coarsely punctured; posterior area of pronotum distinctly less suberenuate.

TYPE LOCALITY.—Near Rincon de Osa, Puntarenas, Costa Rica.

TYPE MATERIAL.—The female holotype, male allotype, and 47 paratypes were taken at the type locality on 11 August 1966, 50 m elevation, from *Bursera simarubra*, by S. L. Wood. Fifty paratypes were taken at Ft. Clayton, Canal Zone, Panama, 27 July 1966, 70 m elevation, from *Bursera simarubra*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Dendroterus cognatus*, n. sp.

This species is very closely related to *mexicanus* Blandford, but it is distinguished by the more slender form, by the more broadly, evenly rounded, more coarsely punctured male frons,

by the more convex female frons with shorter, less abundant vestiture, by the more coarsely punctured pronotum and elytra, and by the more distinctly impressed elytral declivity on which there are numerous minute, impressed points. Future collecting could necessitate the reduction of this form to a subspecies.

FEMALE.—Length 2.0 mm (paratypes 1.8-2.2 mm), 2.8 times as long as wide; color black.

Frons broadly, moderately concave to epistoma; surface rather coarsely, evenly granulate-punctate; vestiture finer, shorter, about half as abundant as in *mexicanus*.

Pronotum 1.23 times as long as wide; about as in *mexicanus* except punctures slightly larger, deeper.

Elytra 1.67 times as long as wide; outline as in *mexicanus* but much more broadly rounded behind; striae punctures coarser and deeper than in *mexicanus*, interstriae narrower than striae. Declivity slightly steeper than in *mexicanus*, very slightly more strongly impressed, sculpture as in *mexicanus* except minute impressed points larger and much more numerous. Vestiture averaging longer and coarser than in *mexicanus*.

MALE.—Similar to female except frons as in male *mexicanus* but more broadly, evenly convex, more coarsely punctured, with lateral epistomal calli only moderately to poorly developed.

TYPE LOCALITY.—Five km (3 miles) west of El Salto, Durango, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and eight paratypes were taken at the type locality on 7 June 1965, 2500 m elevation, No. 194, from *Bursera*, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Phelloterus*, n. gen.

This genus has the distinctive gallery pattern and habits, and the broad oral region of *Styphlosoma* Blandford and some of the elytral characters of *Dendroterus* Blandford, but it has the antennal club more nearly like *Pityophthorus* Eichhoff, and an acutely elevated lateral and basal margin on the pronotum. It is distinguishable from *Pityophthorus* only by a combination of characters.

DESCRIPTION.—Length 1.3-2.2 mm, body rather stout; color reddish brown, vestiture of hair and or scales.

Frons convex in both sexes, epistomal area very broad, a premandibular lobe usually pres-



ent at least in female; mandibles enlarged, elongate in female. Eye finely faceted, emarginate. Antennal scape elongate; funicle 5-segmented; club subcircular, sutures 1 and 2 straight, septate at margins only, marked by setae at margins only, apparently suture 3 procurved, marked by setae just below apical margin. Pronotum about as wide as long, anterior half coarsely asperate; summit indefinite, transition from asperate to smooth areas gradual. Elytra striate, discal striae 1-3 usually slightly confused; interstitial punctures very sparse; declivity steep, convex, usually narrowly bisulcate, punctures on striae 1 and 2 large and usually deep; interstriae 3 in male coarsely dentate and with several large teeth or granules in lateral areas, females less strongly sculptured. Tibiae slender, as in *Pityophthorus*.

TYPE-SPECIES.—*Phelloterus tersus* Wood, described below.

BIOLOGY.—The polygamous species of this genus infest trees with thick phloem tissues. Their nuptial chamber is tabular, with the longitudinal axis parallel to the grain of wood and the transverse axis perpendicular to the cambium surface. Compared to other phloem-inhabiting genera the nuptial chamber stands on its edge. From one to five egg galleries branch from the inner margin of the nuptial chamber well before they reach the cambium region. Eggs and larvae occurred only in the cambium region. From one to four females were found with each male.

*Phelloterus tersus*, n. sp.

This species has minute tubercles on declivital interstriae 1, and declivital interstriae 2 flat and very strongly impressed; the sparse elytral setae are almost hairlike.

MALE.—Length 2.0 mm (paratypes 1.8-2.1 mm), 2.2 times as long as wide; color reddish brown.

Frons very strongly convex, rather strongly, transversely impressed just above epistoma, epistomal margin slightly produced in median area; surface shining, very coarsely, deeply punctured to well above upper level of eyes. Mandibles normal. Eye about twice as long as wide, emarginate; rather finely faceted. Antenna as described for genus.

Pronotum 1.03 times as long as wide; widest one-third length from base, sides moderately arcuate on less than basal two-thirds, narrowly rounded in front; anterior margin serrate; summit indefinite, at or behind middle; posterior

area shining, with many minute, impressed points, punctures moderately large, deep, rather close. Glabrous except at margins.

Elytra 1.3 times as long as wide, 1.3 times as long as pronotum; sides almost straight and subparallel on slightly more than basal half, very broadly rounded behind, posterior outline interrupted by coarse denticles; striae 1 feebly impressed, 1-3 moderately confused, punctures rather coarse, deep; interstriae smooth, shining, with rather numerous, minute, impressed points, punctures absent. Declivity very steep, narrowly sulcate; strial punctures very shallow; interstriae 1 abruptly, moderately elevated, with about six widely spaced, fine granules, 2 as wide as 1 or 3, strongly impressed, flat, impunctate, 3 abruptly, rather strongly elevated and armed by five or six widely spaced, coarse, pointed teeth, 4-9 each with one to three denticles of various sizes, some as large as those on 3. Vestiture confined to declivity; of sparse, short, stout, interstitial bristles.

FEMALE.—Similar to male except frons less coarsely punctured, premandibular process on epistomal margin small, rectangular, as long as wide, mandibles slightly elongate; declivital interstriae 2 less strongly impressed, granules on all interstriae much smaller.

TYPE LOCALITY.—Colonia Tovar, Aragua, Venezuela.

TYPE MATERIAL.—The male holotype, female allotype, and 32 paratypes were taken at the type locality on 4 May 1970, 1700 m elevation, No. 507, probably *Eshweilera* log, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Phelloterus anaxeus*, n. sp.

This species is closely related to *tersus* Wood, but it is distinguished by the more gradual elytral declivity, in the male interstriae 1 is impressed, less strongly convex and devoid of granules, and by the elongate female mandibles.

MALE.—Length 1.8 mm (paratypes 1.6-1.9 mm), 2.4 times as long as wide; color yellowish brown.

Frons as in *tersus* except transverse impression very weak. Antennal club very slightly wider than long. Pronotum as in *tersus* except ten teeth on anterior margin more clearly defined.

Elytra 1.4 times as long as wide; posterior margin rather narrowly rounded, declivital teeth

not interrupting outline; disc as in *tersus* except shorter. Declivity gradual, sulcate; interstriae 1 impressed and convex, unarmed, 2 ascending toward 3 and bearing a row of coarse punctures, 3 elevated and armed by three coarse, widely separated teeth; lateral denticles positioned as in *tersus* but smaller. Vestiture much stouter.

**FEMALE.**—Similar to male except frons more finely punctured, premandibular epistomal lobe larger, twice as wide as long, mandibles greatly enlarged and elongate; elytral declivity very shallowly sulcate, interstriae 2 convex, denticles as in male but slightly smaller.

**TYPE LOCALITY.**—Eight km south of Colonia (near Buenaventura), Valle de Cauca, Colombia.

**TYPE MATERIAL.**—The male holotype, female allotype, and 49 paratypes were taken at the type locality on 9 July 1970, 30 m elevation, No. 609, from *Sacoglothia procera*, by S. L. Wood. Seventy-four paratypes bear identical data except they were No. 614, taken from *Couma macrocarpa*; three paratypes bear identical data except No. 612, taken from *Licania* sp.; eleven paratypes bear identical data except No. 611, taken from *Lecythis* sp. Forty-eight paratypes were taken 27 km northeast of Montoya (Campamento Capote) on 2 July 1970, 150 m elevation, No. 589, *Eshweilera* (5), No. 586 in Sapotaceae (28), and No. 587 in an unidentified tree limb (15).

The holotype, allotype, and paratypes are in my collection.

*Phelloterus atrocis*, n. sp.

This species is closely related to *anaxeus* Wood, but it is distinguished by the smaller size, by the conspicuous transverse impression above the epistoma in both sexes, and by details of sculpture on the elytral declivity.

**MALE.**—Length 1.3 mm. (paratypes 1.3-1.6 mm), 2.4 times as long as wide; color yellowish brown.

Frons and antenna as in *tersus*. Pronotum and elytral disc as in *anaxeus*. Declivity moderately steep, rather broadly, shallowly sulcate; as in *anaxeus* except interstriae 2 more deeply impressed. Declivital vestiture with rather abundant ground cover of short, stout, almost scalelike interstitial setae and very fine, short, recumbent, strial hair; a few longer interstitial bristles also arise from the tubercles and lateral areas.

**FEMALE.**—Similar to female of *anaxeus* except mandibles slightly smaller; impression on

elytral declivity not as deep; declivital tubercles absent, a few minute granules present on all interstriae.

**TYPE LOCALITY.**—Campamento Capote, 27 km northeast of Montoya, Santander, Colombia.

**TYPE MATERIAL.**—The male holotype, female allotype, and 122 paratypes were taken at the type locality on 2 July 1970, 150 m elevation, No. 589, *Eshweilera*, sp., S. L. Wood. Eleven paratypes bear identical data except No. 586, in Sapotaceae; 29 paratypes bear identical data except No. 587, in a limb of an unidentified tree. Twenty-five paratypes are from 8 km south of Colonia (near Buenaventura), 9 July 1970, 30 m elevation, No. 609, *Sacoglothia* sp., S. L. Wood. All series were associated in the same branches with *anaxeus*.

The holotype, allotype, and paratypes are in my collection.

*Pityophthorus arceuthobii*, n. sp.

In Blackman's (1928) classification of the *Pityophthorus* this species would be placed close to *caelator* Blackman, but the relationship to that or to named Mexican species is remote at best. From *caelator* it is distinguished by the very different frons in both sexes, by the much coarser pronotal and elytral punctures in both sexes, and by the shallower sulcus on the elytral declivity which is almost totally devoid of granules on the lateral convexities.

**FEMALE.**—Length 1.8 mm (paratypes 1.8-2.0 mm), 2.6 times as long as wide; color very dark brown, elytra usually slightly lighter.

Frons planoconvex, with a slight transverse impression on lower third, epistomal margin weakly elevated; surface subshining, rather coarsely, closely punctured, on a hemispherical area; vestiture of fine, rather long hair of equal length almost uniformly distributed over punctured area. Antennal club with suture 1 straight, segments 2 and 3 about equal in width.

Pronotum 1.0 times as long as wide; widest near base, sides almost parallel on slightly less than basal half, weakly constricted on anterior half, rather broadly rounded in front; anterior margin armed by about ten, small, irregularly formed teeth; posterior area reticulate, punctures coarse, deep. Glabrous except at margins.

Elytra 1.6 times as long as wide, 1.7 times as long as pronotum; sides almost straight and parallel on basal two-thirds, then slightly converging, broadly rounded behind; striae 1 narrowly impressed on posterior half of disc; striae

moderately confused, punctures large, deep, only moderately close, equal in size and appearance with slightly less abundant, confused, interstitial punctures; surface shining, not completely smooth. Declivity rather steep, broadly, shallowly sulcate; punctures on striae 1 and 2 minute but distinct; interstriae 2 wide, smooth, moderately impressed, 1 sharply, slightly elevated, bearing about six minute granules, 3 gradually, broadly raised, punctures very feebly granulate. Vestiture of sparse, rather short, coarse hair, mostly on sides.

MALE.—Similar to female except frons more strongly convex above, lower half with a rather thick, low, median carina which gradually increases in height to summit just above epistoma, surface subreticulate, less regularly punctured, frontal vestiture sparse, short; granules on elytral declivity scarcely evident.

TYPE LOCALITY.—Ninety-six km (60 miles) west of Durango, Durango, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and 38 paratypes were taken at the type locality on 5 June 1965, 2500 m elevation, No. 27, from a dying mistletoe, *Arceuthobium globosum*, growing in a 5-needle pine, by S. L. Wood. This is the first representative of the Pityophthorini reported from the Loranthaceae.

The holotype, allotype, and paratypes are in my collection.

*Pityoborus hondurensis*, n. sp.

This species is distinguished from the closely allied *velutinus* Wood by the less strongly impressed female frons, with the yellowish pubescence finer, shorter and less abundant, by the much smaller pilose areas on the female pronotum, by the more strongly impressed, more abundant, confused punctures on the elytral declivity, and by the more abundant vestiture on the elytral declivity.

FEMALE.—Length 2.0 mm (paratypes 1.8-2.0 mm), 2.6 times as long as wide; color reddish brown.

Frons as in *velutinus* except very slightly less strongly impressed on a narrower area, with fine, sparse punctures; lateral vestiture finer, less abundant, much shorter. Pronotum as in *velutinus* except pilose areas distinctly smaller; posterior area with moderately abundant, small, shallow punctures clearly evident.

Elytra as in *velutinus* except punctures on disc deeper, slightly larger, with a few more

interstitial punctures particularly on posterior half; declivital punctures smaller than on disc but much larger and deeper than in *velutinus*, interstriae 1 distinctly elevated, striae and interstitial punctures in somewhat indistinct rows; sparse vestiture on declivity more abundant than in *velutinus*.

MALE.—Similar to female except frons not at all concave, vestiture greatly reduced; pilose areas on pronotum absent; pronotal punctures less distinct; punctures on discal striae slightly larger; declivital interstriae 1 and 3 with minute granules.

TYPE LOCALITY.—Yuscaran, Paraiso, Honduras.

TYPE MATERIAL.—The female holotype, male allotype, and 11 paratypes were taken at the type locality on 23 April 1964, 800 m elevation, from small shaded-out branches of *Pinus caribaea* (No. 518, type) and *P. oocarpa* (No. 519), by S. L. Wood. Galleries were typical of the genus.

The holotype, allotype, and paratypes are in my collection.

*Pityoborus frontalis*, n. sp.

This species is distinguished from the closely allied *velutinus* Wood by the more deeply concave female frons, with the frontal vestiture finer and pale yellow in color, and by the much larger, deeper striae punctures on the declivity.

FEMALE.—Length 2.0 mm (allotype 2.0 mm), about 2.6 times as long as wide (elytra spread); color rather dark reddish brown.

Frons as in *velutinus* except much more deeply concave on a narrower circular area; vestiture in lateral areas much finer, pale yellow in color. Pronotum as in *velutinus* except reticulation stronger, punctures more clearly evident.

Elytra as in *velutinus* except reticulation stronger, declivity more nearly shining; striae punctures on declivity larger, deeply impressed.

MALE.—As in female except frons not concave, feebly impressed, surface reticulate, vestiture on lateral and upper margins similar but slightly less abundant; pilose areas on pronotum absent.

TYPE LOCALITY.—Thirteen km southeast of El Cameron, Oaxaca, Mexico.

TYPE MATERIAL.—The female holotype and male allotype were taken at the type locality on 21 June 1967, No. 75, from a shaded-out branch of *Pinus*, by S. L. Wood.



The holotype and allotype are in my collection.

*Pseudopityophthorus singularis*, n. sp.

This species is allied to *tenuis* Wood, but it is distinguished by the coarser pronotal punctures, by the longer elytral setae, by the weakly impressed male frons with slightly longer and more abundant setae, and by the subconceave female frons which lacks a median carina.

MALE.—Length 1.6 mm (paratypes 1.3-1.6 mm), 3.0 times as long as wide; color very dark brown (most of type series not fully colored).

Frons flattened, epistoma weakly elevated, surface indistinctly punctured; vertex bearing a sparse brush of about two dozen very long setae with tips reaching to epistoma, a few additional setae in epistomal area. Antenna as in *tenuis*.

Pronotum much as in *tenuis*, with anterior margin more broadly rounded; punctures on disc much larger, impressed points moderately abundant.

Elytra 1.8 times as long as wide; sides almost straight and parallel on basal two-thirds, rather broadly rounded behind; striae not impressed, punctures small, distinct, in rows; interstriae almost smooth, a few minute, impressed points, at least three times as wide as striae, a few punctures toward declivity. Declivity steep, rather broadly convex; punctures of striae 1 minute, in a row, others obsolete; sutural interstriae feebly elevated, 1, 3 and some of lateral interstriae with sparse, minute, setiferous punctures. Vestiture of very minute strial hair, and rows of widely spaced, moderately long, fine interstitial hair on sides and declivity, almost obsolete on disc.

FEMALE.—Similar to male except frons convex above eyes, transversely impressed above epistoma, impression extending dorsad slightly at center, surface very coarsely punctured, vestiture sparse, inconspicuous.

TYPE LOCALITY.—One km west of Las Vigas, Veracruz, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and five paratypes were taken at the type locality on 5 July 1967, No. 159, from a *Quercus* branch, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Pseudopityophthorus virilis*, n. sp.

This species has the frons ornamented by setae in both sexes; it is remotely similar to

*granulifer* Wood but it is distinguished by the smaller size, by the distinctly punctured elytral declivity, and by the presence of granules only on interstriae 1 and 3.

MALE.—Length 1.5 mm (paratypes 1.3-1.6 mm), 2.7 times as long as wide; color black.

Frons transversely impressed, flattened from above eyes to epistoma; surface somewhat coarsely punctured above and at sides, evidently impunctate below in median area; vertex ornamented by a rather dense brush, its longest setae exceed epistomal margin, a few additional setae at sides and on epistomal area. Antenna about as in *granulifer*.

Pronotum as in *granulifer* except teeth on anterior margin of pronotum larger, punctures on disc very slightly larger, impressed points much smaller.

Elytra 1.6 times as long as wide; outline as in *granulifer*; punctures on disc confused, not in rows except near declivity, small; surface subshining, with a few irregular lines and impressed points. Declivity steep, convex; interstriae 1 and 3 each bearing a row of fine, rounded granules, three indistinct rows of minute, setiferous punctures between rows of granules, lateral areas similarly punctured. Vestiture almost hairlike at base, becoming scalelike toward declivity, those setae apparently derived from interstriae distinctly longer than those derived from striae; longest scales on declivity rather short, about six times as long as wide.

FEMALE.—Similar to male in all respects, including frontal sculpture and vestiture.

TYPE LOCALITY.—One km west of Las Vigas, Veracruz, Mexico.

TYPE MATERIAL.—The male holotype, female allotype, and 19 paratypes were taken at the type locality on 5 July 1967, No. 159, from *Quercus* branches, by S. L. Wood.

The holotype, allotype, and paratypes are in my collection.

*Pseudopityophthorus declivis*, n. sp.

This species is unique in the genus; it is distinguished by the subvertical, impressed elytral declivity on which the striae are clearly indicated by rows of moderately coarse punctures.

FEMALE.—Length 1.8 mm, 2.6 times as long as wide; color very dark brown.

Frons broadly convex above eyes, almost flat below, with epistomal area weakly elevated; surface very coarsely, deeply punctured above

and at sides, almost impunctate in median area below; vestiture rather sparse except on epistoma, of fine, long hair. Antennal club moderately large, widest through segment 3.

Pronotum 1.1 times as long as wide; widest near base, sides feebly arcuate and converging very slightly on basal two-thirds, rather broadly rounded in front; anterior margin armed by a continuous, elevated, serrate costa; summit at middle; anterior area rather finely asperate; posterior area rather coarsely, deeply, closely punctured, general surface subreticulate. Subglabrous.

Elytra 1.6 times as long as wide, 1.4 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather broadly bisinuate behind; striae not impressed, punctures rather fine (coarse for this genus), deep; interstriae three times as wide as striae, with very fine, irregular lines, numerous impressed points, impunctate. Declivity subvertical, flattened, confined to less than posterior fifth; striae 1-3 clearly indicated, punctures shallow; surface almost flat except for strongly elevated interstriae 1; very fine punctures on all interstriae except 2. Vestiture confined to posterior third, of very minute strial hair, and rows of erect, moderately long, interstitial bristles of uniform length.

TYPE LOCALITY.—Laguna Santa Maria, Nayarit, Mexico.

TYPE MATERIAL.—The unique female holotype was taken at the type locality on 6 July 1965, 1000 m elevation, No. 203, from a *Quercus* branch, by S. L. Wood.

The holotype is in my collection.

*Pseudopityophthorus colombianus*, n. sp.

This unique species is the first representative of the genus known from South America; it is distinguished from other species by the very slender form, by the shallowly bisulcate elytral declivity on which the strial punctures are in rows, and by the rather coarse granules on interstriae 3.

MALE.—Length 1.4 mm (paratypes 1.3-1.5 mm), 3.0 times as long as wide; color brown.

Frons flattened from eye to eye, from epistoma to vertex; surface smooth, shining, with fine punctures (evidently only near sides; obscured), central area glabrous; lateral and upper margins with a dense row of long yellow setae, tips of those on vertex reaching epistomal margin. Antennal club rather small; sutures 1 and 2 almost straight.

Pronotum 1.2 times as long as wide; widest on basal third; sides feebly arcuate, converging slightly on basal two-thirds, rather broadly rounded in front; anterior margin armed by more than a dozen small teeth; summit in front of middle; asperities usually in poorly defined subconcentric rows; posterior area almost smooth, punctures moderately coarse, rather sparse. Vestiture of short, sparse hair, except bristlelike in asperate area.

Elytra 1.9 times as long as wide, 1.6 times as long as pronotum; sides almost straight and parallel on basal three-fourths, broadly rounded behind; striae not impressed, punctures rather coarse, moderately deep; interstriae almost smooth, as wide as striae, punctures almost as large as those of striae but almost entirely confined to interstriae 1 and to posterior fourth of disc. Declivity steep, broadly, shallowly bisulcate; strial punctures fine, shallow; sutural interstriae slightly elevated, 2 slightly, rather broadly impressed, 3 gradually, distinctly elevated and bearing a row of three to five moderately coarse granules; lateral areas with occasional smaller granules. Vestiture of moderately abundant, rather long, hairlike setae, some interstitial setae rather coarse.

FEMALE.—Similar to male except frons convex, lower third with a distinct transverse impression, surface rather coarsely punctured, vestiture sparse, inconspicuous.

TYPE LOCALITY.—Piedras Blancas, 10 km east of Medellin, Antioquia, Colombia.

TYPE MATERIAL.—The male holotype, female allotype, and 50 paratypes were collected at the type locality on 15 July 1970, 2500 m elevation, No. 667, from small *Quercus humboldtii* branches, by S. L. Wood. The galleries and habits were as in other species of the genus.

The holotype, allotype, and paratypes are in my collection.

*Gnathophthorus clematis*, n. sp.

Fig. 7

The only previously known species in this genus, *sparsepilosus* (Schedl), is not closely related to any of the species described here. That species has the frons more uniformly sculptured and pubescent than those presented below, but it shares the very slender form and the distinctive antenna and elytral declivity of these four species. Two of the species for which hosts are known breed in vines of the genus *Clematis* and have similar habits.

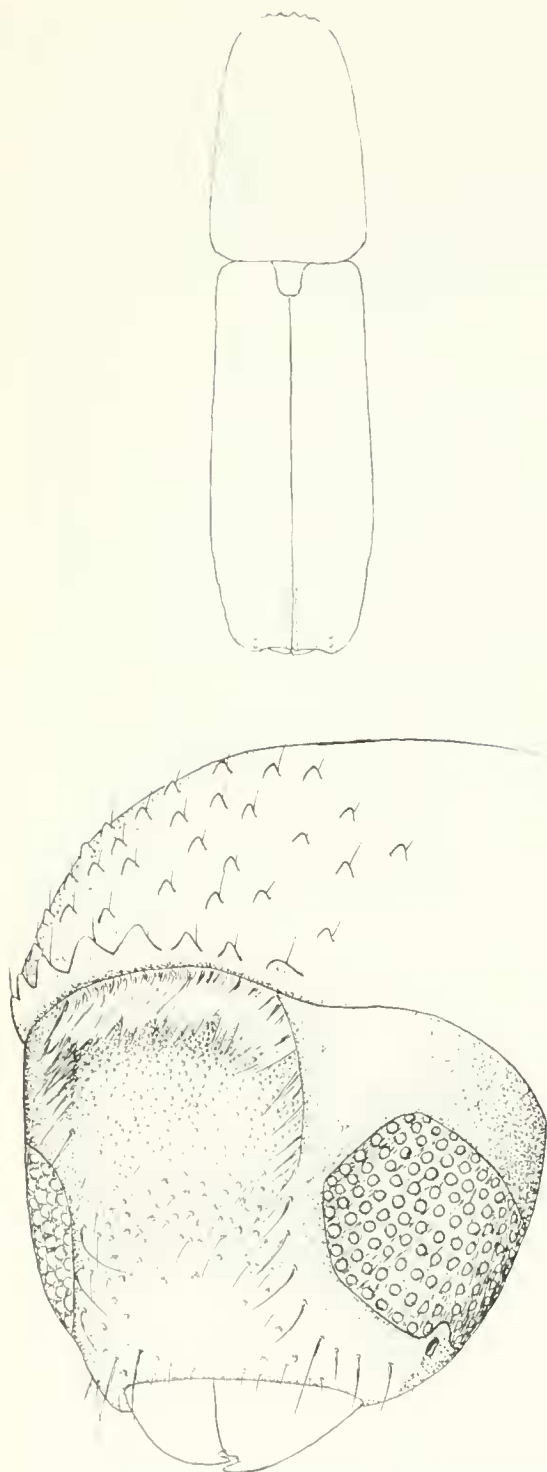


Fig. 7. *Gnathophthorus clematis*: dorsal aspect of outline of female (above); and anterolateral aspect of female head (below).

**FEMALE.**—Length 1.9 mm (paratypes 1.4–2.0 mm), 3.8 times as long as wide; color light yellowish brown, pronotum and elytral declivity slightly darker.

Frons flattened from just above epistoma to vertex, transversely divided at upper level of eyes by a feeble summit; lower area coarsely, shallowly, closely punctured, with sparse, uniformly distributed, inconspicuous, hairlike pubescence; upper area appearing somewhat spongy, very minutely, densely punctured, with microscopic pilelike pubescence and with a marginal fringe of short hair of uniform length, little if any longer than setae on lower frons. Eye large, emarginate, coarsely faceted. Antennal funicle 5-segmented, last four segments crowded, indistinct; club very large, with three moderately procurved, nonseparate sutures.

Pronotum 1.4 times as long as wide; sides on basal half straight and parallel, constricted slightly in front of middle then weakly arcuate to broadly rounded anterior margin; anterior margin armed by eight widely spaced, coarse teeth; summit on anterior third, indefinite; anterior third rather finely asperate; posterior area smooth, with fine, deep, sparse punctures. Glabrous except for scattered hair near lateral margins.

Elytra 2.4 times as long as wide, 1.8 times as long as pronotum; sides straight and parallel on more than basal three-fourths, broadly rounded behind; declivity confined to posterior one-sixth; striae not impressed, punctures minute, scarcely indicated on surface; interstriae almost smooth, impunctate. Declivity steep, rather strongly excavated; striae obsolete; interstriae 1 moderately elevated, with a row of moderately coarse punctures; area of interstriae 2 strongly impressed, widened at middle; lateral areas strongly elevated on upper two-thirds, summit broadly rounded, with rather coarse, confused punctures, two very feeble granules on upper margin of elevated area. Disc glabrous; moderately abundant, coarse hair on declivity.

**MALE.**—Similar to female except frons convex above, lower half abruptly impressed, subreticulate, punctures rather coarse, vestiture sparse, inconspicuous; granules on elytral declivity larger, pointed.

**TYPE LOCALITY.**—Volcan Colima, Jalisco, Mexico.

**TYPE MATERIAL.**—The female holotype, male allotype, and 106 paratypes were taken at the type locality on 23 June 1965, 2500 m elevation, No. 100, from *Clematis*, by S. L. Wood. Other specimens, not included in the type series are from Tapanti and Volcan Irazu, Costa Rica; and Volcan Chiriqui, Panama. The monogamous beetles construct transverse, biramous galleries



in the cambium region; egg niches are small and packed with frass; larval mines are straight, in grooves between the longitudinal fibers, up to 40 mm long, of uniform diameter; fungal growth was noted in the parental tunnels but not in the larval mines.

The holotype, allotype, and paratypes are in my collection.

*Gnathophthorus cracens*, n. sp.

This species is allied to *clematis* Wood, but it has the frontal pile much longer and covering a large area, and the declivital sulcus is much narrower and armed by several denticles.

FEMALE.—Length 1.2 mm, about 3.8 times as long as wide; color yellowish brown.

Frons as in *clematis* except lower area flat, very finely, sparsely punctured, ending well below upper level of eyes; upper area slightly more extensive, pile long, dense, setae on marginal fringe on upper margin only, much longer, tips reaching middle of pilose area. Pronotum as in *clematis* except anterior margin armed by 10 teeth; punctures on posterior area minute.

Elytra as in *clematis* except declivity narrowly, deeply sulcate; sutural interstriae feebly elevated; lateral areas abruptly elevated from position of striae 2, summit armed by five or six small, laterally compressed teeth.

TYPE LOCALITY.—La Ceiba, Honduras.

TYPE MATERIAL.—The female holotype was taken at the type locality on 15 May 1949, at light, by E. C. Becker.

The holotype is in my collection.

*Gnathophthorus rallus*, n. sp.

This species is allied to *clematis* Wood, but it is distinguished by the different sculpture of the frons, by the minutely etched pronotal disc, by the larger striae punctures, and by the dark color.

FEMALE.—Length 1.8 mm (paratypes 1.5-1.9 mm), 3.7 times as long as wide; color very dark brown, almost black.

Frons flattened from just above epistoma to vertex; area below upper level of eyes rather finely, shallowly punctured, with inconspicuous, moderately long, hairlike pubescence; upper area twice as large as lower area, pilose as in *clematis*, marginal fringe long, tips of upper setae extend beyond middle of pilose area.

Pronotum as in *clematis* except posterior

area reticulately, longitudinally etched, punctures slightly smaller.

Elytra as in *clematis* except striae punctures slightly larger, surface with minute, impressed points, and shallow, irregular, transverse lines; declivity devoid of granules.

MALE.—Similar to female except frons as in male *clematis* with line between convex and impressed areas more nearly carinate.

TYPE LOCALITY.—Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 65 paratypes were taken at the type locality on 29 December 1970, 1700 m elevation, No. 210, 212, from recently cut stems of *Clematis*, by S. L. Wood. The habits were as in *clematis*.

The holotype, allotype, and paratypes are in my collection.

*Gnathophthorus pertusus*, n. sp.

This distinctive species differs from all others in the genus by the small, median elevations on the male frons at the epistoma and at the upper level of the eyes, and by the peculiar cavity on the female frons. The small size and several other features also serve to distinguish it.

FEMALE.—Length 1.4 mm (paratypes 1.1-1.4 mm), 3.7 times as long as wide; color light yellowish brown.

Frons shallowly concave from just below upper level of eyes to vertex, a somewhat indefinite summit just below impressed area; median third of summit area occupied by a large cavity from upper level of eyes one-third distance to epistoma, inner diameter of cavity apparently larger than its opening on surface, its margins slightly elevated, its inner walls precipitous; surface of concave area subreticulate, impunctate, its upper margin with a fringe of short hair; surface of lower area with a few minute punctures and sparse, short pubescence. Funicular segments, except pedicel, very crowded, evidently partly fused to one another; club with suture 1 weakly procurved, 2 almost straight.

Pronotum 1.4 times as long as wide; widest at base, sides straight and converging very slightly on basal three-fourths, rather narrowly rounded in front; anterior margin armed by about 12 small teeth; summit indefinite, one-third pronotum length from anterior margin; anterior third finely asperate; posterior area almost smooth, punctures not evident.

Elytra 2.2 times as long as wide, 1.7 times as long as pronotum; sides straight and parallel on slightly more than basal two-thirds, then gradually converging, very broadly rounded behind; striae not impressed, punctures minute, almost totally obsolete, visible in subsurface structure; interstriae almost smooth, impunctate. Declivity moderately steep, rather deeply sulcate; striae as on disc; sutural interstriae weakly elevated, 2 narrowly, deeply impressed, 3 abruptly, strongly elevated well above level of 1, its summit armed by about five granules of moderate size. Vestiture largely confined to declivity, of sparse, coarse, moderately long hair.

MALE.—Similar to female except frons convex on upper half, broadly, transversely impressed below, a short, median elevation on epistoma and at upper limit of impressed area, cavity and setae absent; longer setae on elytral declivity flattened, scalelike, small setae in ground cover much more conspicuous.

TYPE LOCALITY.—Twenty km southwest of El Vigía, Merida, Venezuela.

TYPE MATERIAL.—The female holotype, male allotype, and 33 paratypes were taken at the type locality on 21 November 1969, 50 m elevation, No. 150, from a recently cut section of a large Bignoniaceae vine (liana), by S. L. Wood. The woody structure of the liana was layered and each pair of the monogamous beetles constructed transverse, biramous egg galleries at each of a half dozen or more successive layers; the connecting tunnel was more or less straight and was located where each pair of egg galleries branched. Larval mines were rather short and longitudinal. Fungal growth was not evident.

The holotype, allotype, and paratypes are in my collection.

*Sphenoceros aztecus*, n. sp.

This is the second known species in this genus and the first from North America. It is very closely related to *limax* Schedl, but it is

distinguished by the very minutely punctured central area of the female frons, by the indistinctly more slender, angulate, anterior projection of the female pronotum, by the more slender elytral bristles, and by the more finely punctured elytra with fewer interstitial punctures.

FEMALE.—Length 2.0 mm (paratypes 1.8-2.2 mm), about 2.1 times as long as wide; color very dark reddish brown.

Frons exactly as in *limax* except surface of large central area minutely, densely punctured. Antenna as in *limax* except suture 2 more distinctly indicated. Pronotum as in *limax* except anterior projecting angle very slightly more slender, and punctures on disc distinctly smaller.

Elytra as in *limax* except punctures of striae and interstriae very slightly smaller, those of interstriae less numerous. Interstitial scales slightly longer and more slender.

MALE.—As in male of *limax* except lateral punctures on pronotal disc smaller; elytra differ as in females.

TYPE LOCALITY.—Six km (4 miles) west of Tepic, Nayarit, Mexico.

TYPE MATERIAL.—The female holotype, male allotype, and eight paratypes were taken at the type locality on 13 July 1965, 1000 m elevation, No. 240, from cut branches of a large unidentified tree, by S. L. Wood. One paratype is from El Salto, San Luis Potosí, Mexico, 19 June 1953, *Ficus*, S. L. Wood. A series from 8 km east of San Blas, Nayarit, Mexico, 12 July 1965, No. 235, is in very poor condition and is not part of the type series.

This genus was placed by Schedl in the Corthylini; however, the above species is monogamous, the adults construct transverse, biramous tunnels in the cambium region and deposit their eggs in niches, and the larval tunnels are longitudinal and in the phloem. This genus is very closely related to and eventually may be united with certain species of *Neodryocoetes*.

The holotype, allotype, and paratypes are in my collection.